OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **October 12, 2004**

TO: Dawson Lasseter, P.E., Chief Engineer, Air Quality Division

THROUGH: David Schutz, P.E., New Source Permits Section

THROUGH: John Howell, E.I., Existing Source Permits Section

THROUGH: Peer Review

FROM: Roya Sharifsoltani, New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **97-057-C (M-4) PSD**
Weyerhaeuser Company
Valliant Paper Mill
Valliant, McCurtain County, Oklahoma
Secs. 26, 27, 28, 33 and 34-T6S-R21E
UTM Zone 15,306.50 Km Easting by 3,763.50 Km Northing
Located One Mile West of Valliant on US-70

SECTION I. INTRODUCTION

Weyerhaeuser operates a Kraft Process paper mill (SIC 2631, NAIC 32213) in southeast Oklahoma. Weyerhaeuser Company (Weyerhaeuser) is planning a series of new construction and modification projects to enhance its existing Valliant, Oklahoma, paper products manufacturing facility (Valliant Mill). Current active permits include Permit Nos. 75-011-O, 75-012-O, 86-019-O, 91-093-O, 95-224-O, 96-043-C (PSD), 96-043-C (M-1)(PSD), 96-043-C (M-2)(PSD), 96-043-C (M-3)(PSD), 96-188-C, 99-134-C, and 97-057-C (M-2).

Weyerhaeuser anticipates the following major components of the proposed project:

- Construction of a new chemical recovery furnace to replace the existing chemical recovery furnace (CRF) used in the chemical recovery process.
- Construction of a circulating fluidized bed (CFB) boiler to enhance the mill's steam production capabilities.
- The No. 2 Power Boiler, which was permitted under Permit No. 96-043-C (M-3), will not be constructed.
- Construction of a new lime kiln to supplement regeneration of the mill's cooking chemicals.
- Installation of new spent liquor mix tanks to replace the existing spent liquor mix tanks.
- Enhancements to the evaporator area.

- Installation of new smelt dissolving tanks to replace the existing smelt dissolving tanks. The new smelt dissolving tanks will not be emission points. Rather, airflow from the new smelt dissolving tanks will be routed through the new chemical recovery furnace as combustion air make-up.
- Decommissioning of the existing Bark Boiler.
- Decommissioning of the existing Power Boiler from normal operation. The Power Boiler will function as a back-up steam generating unit. Future operation of the Power Boiler will occur mainly when either the new chemical recovery furnace or the new CFB Boiler are not in operation, but will be available to provide steam on a limited basis when those two units are also in operation.
- Decommissioning of the non-condensable gas (NCG) thermal oxidizer from regular operation and reroute of NCGs and stripper off-gases (SOGs) to the new chemical recovery furnace, with the new CFB Boiler serving as a backup control device for NCGs and SOGs. The NCG Thermal Oxidizer will function as a secondary backup control device for NCGs and SOGs in the event that the new chemical recovery furnace or CFB Boiler is unavailable for NCG/SOG control.
- Installation of an additional brownstock washing line.
- Enhancements to the existing paper machines and Old Corrugated Container (OCC) plants.
- Enhancements to the existing No. 1 and No. 2 Digester systems

SECTION II. FACILITY DESCRIPTION

Initial construction of the mill began in 1969 and was completed in 1971. The mill produces paper products through the use of chemical digesters, secondary fiber processing, and paper machines. The primary raw materials used in the production of paper products at the mill are fiber source materials such as, but not limited to, wood chips from both softwood and hardwood species and old corrugated containers (OCC). In addition to the pulping and paper-making process units, other equipment at the mill are involved with recovering the chemicals used to produce virgin pulp. Spent cooking liquor is concentrated, burned to remove organics (recover heat value), and reacted with lime to regenerate the cooking liquor. The spent lime used for regeneration is recovered, washed, and calcinated for reuse. Steam requirements at the mill are supplied by two large boilers (Bark Boiler and Power Boiler), a small package boiler and by a recovery furnace. Steam is also used to drive a turbine electric generator that supplements the mill’s electric energy needs.

Operations at the mill can be subdivided into six (6) functional areas. The functional areas are based on the flow of materials within the mill and on the various steps in the production process. Emissions units within each functional process area are identified.

A. Pulping

The digesters produce pulp by utilizing a chemical pulping process in which fiber sources such as wood chips are digested in a water solution of pulping chemicals. This solution chemically dissolves the lignin that holds the fibers together.

Repulping operations prepare fiber for the paper machines. Repulping hydromechanically breaks down fiber source materials in water, which allows the fiber stock to be introduced into the paper machine stock preparation equipment. The fiber sources can include but are not limited to virgin fiber as well as pre-consumer and post-consumer secondary (recycled) fiber.

B. Brownstock Washing

The brownstock washing areas include brownstock washers and brownstock washer filtrate tanks. Brownstock washing area 1 and 2 also include a screening process. Pulp from digester surge tanks is screened in brownstock washing areas 1 and 2 to insure uniform fiber size. The flow-through tanks in the screening system are vented to the atmosphere.

C. Paper Making

The paper machine wet end forms a base sheet by means of the primary headbox, which distributes the dilute stock evenly over a continuously moving wire screen. Water is removed from the stock by gravity drainage, by vacuum, and by press rolls. Until the fiber sheet has dried sufficiently to support its own weight, it is supported first by the wire screen and then by a moving felt sheet. Water removed from the stock during processing, called white water, is collected and reused in various mill processes.

D. Steam Production

Steam producing units currently include:

- Bark Boiler – Emissions Unit D1
- Power Boiler – Emissions Unit D2
- Package Boiler – Emissions Unit D3

In addition to the listed boilers, steam is produced by the Recovery Furnace (Emissions Unit E3) through waste heat recovery. Steam from the Bark Boiler, Power Boiler, and Recovery Furnace feeds a common steam header. From the header, the steam may be used to drive the turbine electric generator. Steam extracted from the generator and steam that bypasses the generator is fed into the steam distribution system for use in various processes. Steam from the Package Boiler feeds directly into the steam distribution system.

The Bark Boiler burns a variety of fuels in varying combinations and amounts. Fuels include but are not limited to wood residues, OCC rejects, wastewater treatment sludge, oil, coal and natural gas. Oils such as residual fuel oil, Petroleum residual fuel oil, Decant slurry oil, carbon black feed stock oil, and slurry oil are all recognized as fuel oil. Used oils from mill equipment may also be added to the Bark Boiler fuel mixture. Particulate emissions from the Bark Boiler are controlled by a primary dust collector and a wet venturi scrubber. The presence of wood ash and the wet venturi scrubber also results in a reduction in SO_2 emissions. Exhaust gases are emitted to the atmosphere through a dedicated stack.

E. Chemical Recovery

The Turpentine Recovery System condenses turpentine from vapors collected from equipment in the Digester areas. The turpentine that is recovered is sold as a by-product. The non-condensable fractions of these vapors are combusted in the NCG Thermal Oxidizer or the Lime Kiln.

Spent pulping liquor collected in the weak black liquor storage tanks is concentrated before it is processed in the Recovery Furnace. Transfers of spent liquor to or from off-site locations may be accomplished at any point in these processes. During the evaporation process, a fatty substance called “soap” is removed from the spent liquor by soap skimmers. The soap is sent to the Tall Oil Plant for conversion into tall oil, which is sold as a product.

The Recovery Furnace is used to recover process chemicals from spent liquor from the spent liquor concentration area or spent liquor obtained from off-site. Prior to being burned, the spent liquor may pass through a mix tank, where it may be mixed with particulate matter captured in the Recovery Furnace’s electrostatic precipitator (ESP). A molten inorganic residue called smelt forms in the Recovery Furnace as a result of the burning of spent liquor. The smelt is drawn off into Smelt Dissolving Tanks and used to initiate the causticizing process that regenerates cooking chemicals. Smelt from the recovery furnace flows into the Smelt Dissolving Tanks, where it is dissolved in water or in weak wash, which is water that has been used in the Causticizing System to wash lime mud. The resulting solution, called green liquor, is sent to the Green Liquor Clarifier for further processing. The Smelt Dissolving Tanks are vented to a combined stack after particulate emissions and TRS have been reduced by spray scrubbers.

The Lime Slakers mix lime with green liquor to initiate the causticizing process that regenerates cooking liquor. The lime is fed from lime bins that are filled either from the Lime Kiln or by lime transported from off-site. Green liquor enters the Slakers from the green liquor clarifier, from green liquor storage, or from off-site sources. The mixture of green liquor and lime flows from the Slakers through clarifiers, which remove unreacted lime and other debris, to the Causticizers.

In the Causticizing area, cooking liquor is regenerated by reacting green liquor from the Smelt Dissolving Tanks with calcium oxide (quick lime). The lime is recovered and re-used in this process. Green liquor from the Smelt Dissolving Tanks (or from off-site sources) flows to the Green Liquor Clarifier, where heavy particles such as undissolved smelt are allowed to settle out. The settled material, known as dregs, goes to the process sewer or to the dregs filter. If the filter is used, the filtrate is returned to the Green Liquor Clarifier, and the remaining dregs are sent to the process sewer, disposed of, or transferred off-site.

Lime Mud from causticizing is calcined in the Lime Kiln to regenerate calcium oxide (quick lime). The Lime Kiln is fueled by natural gas and pet coke and is also currently used as a backup to the NCG Thermal Oxidizer if the Thermal Oxidizer is not being used to oxidize the collected NCGs/SOGs.

Particulate emissions from the kiln are controlled by an electrostatic precipitator, which returns collected lime dust to the kiln. The regenerated quick lime is transferred to the lime bins that feed the Slakers. The Lime Bins are vented to the lime kiln combustion air makeup.

F. Miscellaneous Processes

The Woodyard operations include the receipt, storage, and handling of fiber source materials and Bark Boiler fuels.

Solid fuels for the Bark Boiler are received by railroad or truck. After receipt, the fuels are transferred to the Bark Boiler fuel storage pile. Oversized materials diverted from the fiber source processing/storage area pass through a hogger for size reduction before being stockpiled. Fuel reclaimed from the storage pile is conveyed directly to the Bark Boiler.

Heavy trucks and other vehicles regularly travel on paved and unpaved roads within the Valliant Mill. These vehicles are expected to cause fugitive dust emissions.

The Valliant Mill Wastewater Treatment System (WWTS) consists of the Bark Ash Dewatering System, the bar screen, the Primary Effluent Clarifier, a Sludge Dewatering Operation, the perforated plate screen, Aerated Stabilization Basins, and Emergency Storage Ponds. With the exception of the Sludge Dewatering Operation, the WWTS components are open to the atmosphere. VOCs and reduced sulfur compounds contained in mill wastewater are emitted from the system components.

A variety of solid wastes are generated as part of the manufacturing processes at the Valliant Mill. Wastes generally are transported by trucks from the mill to the on-site Solid Waste Disposal facility (landfill) located south of the manufacturing complex. The majority of the roads in the manufacturing complex are paved while those in the landfill area are unpaved.

SECTION III. PROCESS DESCRIPTIONS

Operations at the Valliant Mill have been subdivided into six functional areas. The functional areas are based on the flow of materials within the Valliant Mill and on the various steps in the production process. Emissions units within each functional process area are identified. Any particular emissions unit may include more than one significant emission point.

VALLIANT MILL FUNCTIONAL AREAS

Functional Area A – Pulping

A1 - No. 1 Digester System
A2 - No. 2 Digester System
A3 - No. 3 Digester System
A4 - No. 1 OCC Plant
A5 - No. 2 OCC Plant
A6 - Makedown Pulper
A7 - No. 3 OCC Plant
A8 - OCC Lightweight Rejects Baghouse

Functional Area B – Brownstock Washing

B1 - No. 1 Brownstock Washing Area
B2 - No. 2 Brownstock Washing Area
B3 - No. 3 Brownstock Washing Area
B4 - No. 4 Brownstock Washing Area *(proposed)*

Functional Area C – Paper Making

C1 - No. 1 Paper Machine (Stock Prep)
C2 - No. 1 Paper Machine (Wet End)
C3 - No. 1 Paper Machine (Dry End)
C4 - No. 2 Paper Machine (Stock Prep)
C5 - No. 2 Paper Machine (Wet End)
C6 - No. 2 Paper Machine (Dry End)
C7 - No. 3 Paper Machine (Stock Prep)
C8 - No. 3 Paper Machine (Wet End)
C9 - No. 3 Paper Machine (Dry End)

Functional Area D – Steam Production

D1 - Bark Boiler *(decommissioned)*
D2 - Power Boiler *(decommissioned from normal operation)*
D3 - Package Boiler
D4 - Power Boiler No. 2 *(permitted; will not be constructed)*
D5 - CFB Boiler *(proposed)*

Functional Area E – Chemical Recovery

E1- Turpentine Recovery System
E2a - Spent Liquor Concentration
E2b - Evaporator Sump
E3a - Spent Liquor Mix Tank *(decommissioned)*
E3b - Recovery Furnace *(decommissioned)*
E3c - Recovery Furnace *(proposed)*
E3d – Spent Liquor Mix Tanks (*proposed*)
E4a - Smelt Dissolving Tanks *(decommissioned)*
E4b - Smelt Dissolving Tanks *(proposed)*
E5 - Lime Slakers
E6 - Causticizing System
E7a - Lime Kiln No. 1 *(formerly EUG E7)*
E7b - Lime Kiln No. 2*(proposed)*
E8 - Tall Oil Plant
E9 - Organic Liquid Storage Vessels
E10 - Volatile Organic Liquid Storage Tank

Functional Area F – Miscellaneous Areas

F1 – Woodyard
F1a – Coal Material Handling – Bark Boiler
F1b – Coal Material Handling - *New*
F2 - Road Emissions–Plant Traffic
F3a - Wastewater Treatment System *(formerly EUG F3)*
F3b - Wastewater Pipeline
F4 - NCG Collection and Thermal Oxidation *(decommissioned from normal operation)*
F5 - Landfill Operations
F6 - Diesel Stormwater Pump
F7/F9 - Wood Chip Screening & Conditioning *(ADS #3 proposed)*
F10 – Steam Stripper System
F11 – Misc. Insignificant Activities
F12 – Wood Chipping Operation
F13 – Petcoke Handling System No. 1
F14 – Petcoke Handling System No. 2 *(proposed)*

<u>Functional Area A - Pulping</u>

Digester Areas (EUGs A1, A2, A3)

The Digesters produce pulp by utilizing a chemical pulping process in which fiber sources are digested in a water solution of pulping chemicals. This solution chemically dissolves the lignin that holds the fibers together. Each Digester area operates in a similar manner, as described below. The No. 1 and No. 2 Digesters use a Kraft pulping system, and the No. 3 Digester uses a semi-chemical pulping system.

Fiber source materials are conveyed from “chip silos” to “chip bins”, which are vented to the high volume, low concentration (HVLC) NCG System (EUG F4). From each chip bin, a meter feeds the material into a steaming vessel, which heats the material to processing temperature. The steaming vessels are vented to the Turpentine Recovery System (EUG E1).

From the steaming vessels, the fiber source material is introduced into the Digesters, along with heated cooking liquor. The material is digested as it travels down the Digesters by gravity flow. The No. 1 Digester area includes a pressurized impregnation vessel between the steaming vessel and the Digester. The fiber source material is steeped in cooking liquor in the impregnation vessel before its introduction into the Digester.

Vapors produced by the cooking process are vented to the Turpentine Recovery System (EUG E1). The spent cooking liquor, which contains dissolved lignin and other organic and inorganic materials, is withdrawn from the Digesters. This spent liquor is depressurized in flash tanks and sent to the weak liquor storage tanks. Vapors from the flash tanks are vented to the Turpentine Recovery System (EUG E1) and/or the steaming vessel.

The digested pulp, also known as brownstock, is withdrawn from the bottom of the Digesters. The brownstock passes through defibrators, which mechanically break apart, the mostly-digested fibers. The pulp is then sent to a surge tank that is vented to the HVLC NCG System (EUG F4).

Repulping Operations (OCC Plants) (EUGs A4, A5, A6, A7)

Repulping operations prepare fiber for the paper machines. Repulping hydromechanically breaks down fiber source materials in water, which allows the fiber stock to be introduced into the paper machine stock preparation equipment. The fiber sources can include, but are not limited to, virgin fiber, as well as preconsumer and postconsumer secondary (recycled) fiber.

The OCC Plants process OCC (old corrugated container) materials, which include, but are not limited to, old corrugated containers (e.g., cardboard boxes), old newspapers, rejected materials from paper machines or box manufacturing facilities, and other types of fiber-containing products.

OCC is received at the Valliant Mill by truck and by rail. Once the OCC is repulped, it then goes through a series of steps to remove heavy and light rejects and adequately separate the fibers from each other. Heavy reject materials may be landfilled or transferred off-site. Light rejects are pressed to remove water, then may be landfilled, transferred off-site, or transferred to a receiving bin before being used as a fuel source. The prepared fiber is stored in OCC high density storage chests for use in the paper machines.

As part of the proposed project, changes will be made to the OCC Plants to enable the Valliant Mill to achieve the target production.

The Makedown Pulper performs a function similar to the OCC plants. It uses box plant trim, which is a relatively clean fiber source material, and cull rolls from the Valliant Mill paper machines. Fiber prepared in the Makedown Pulper can be introduced into the stock preparation areas of any of the three paper machines. There are no significant emission points associated with the Makedown Pulper.

OCC Lightweight Rejects Baghouse (EUG A8)

The OCC Lightweight Rejects Baghouse controls particulate emissions from the Rejects Receiving Bin. Currently, OCC reject materials are blown from the OCC Plants to this bin prior to being introduced to the Bark Boiler fuel stream. As part of the proposed project, this unit will be relocated to facilitate introduction of the OCC reject materials into the CFB Boiler fuel stream.

Functional Area B - Brownstock Washing

Brownstock Washing Areas (EUGs B1, B2, B3, B4)

The brownstock washing areas include brownstock washers and brownstock washer filtrate tanks. Brownstock washing areas 1 and 2 also include a screening process.

Pulp from digester surge tanks is screened in brownstock washing areas 1 and 2 to ensure uniform fiber size. The flow-through tanks in the screening system are vented to the atmosphere. Pulp, either from the screening systems or from digester surge tanks, is washed over rotary vacuum drums in the brownstock washers to remove spent cooking chemicals. After being washed, the pulp is transferred to several high density storage silos. The brownstock washers are hooded and are vented from the pulp mill building to the atmosphere.

Filtrate from the brownstock washers is collected into brownstock washer filtrate tanks. From these tanks, filtrate is either reused in the washing process or is returned to the digester areas.

Brownstock washing area 3 performs a similar function to that described above for brownstock washing areas 1 and 2. However, brownstock washing area 3 washes pulp from the No. 3 Digester, which uses a semi-chemical pulping system. Therefore, brownstock washing area 3 is not subject to the maximum achievable control technology (MACT) standard for pulp and paper mills (40 CFR Part 63, Subpart S).

The proposed project includes the installation of an additional brownstock washing system (brownstock washing area 4). As a new brownstock washing system, the unit will be subject to the New Source Performance Standard (NSPS) in 40 CFR Part 60, Subpart BB. Therefore, emissions from the new brownstock washing system will be collected and routed to the NCG collection system. The collection and control of this source will also comply with the MACT standard in 40 CFR Part 63, Subpart S.

Functional Area C - Paper Making

Paper Machine Stock Preparation (EUGs C1, C4, C7)

Stock preparation is a process of blending the fibers (stock) with water and other additives for consistency control and to prepare the stock for introduction onto the paper machines. In general, the stock is diluted, blended, and cleaned as it passes from vessel to vessel through the stock preparation process. Stock from various sources, such as virgin fiber from the digester areas, secondary fiber from the OCC plants, and recycled fiber from the Makedown Pulper, may be blended together in this process. In addition, fiber recycled from the wet end or the dry end (known as broke) may be processed and added to the stock during preparation.

The various chests (vessels) associated with the stock preparation process are vented either directly to the atmosphere or to the interior of the paper machine building.

Paper Machine Wet End (EUGs C2, C5, C8)

The paper machine wet end forms a base sheet by means of the primary headbox, which distributes the dilute stock evenly over a continuously moving wire screen. Water is removed from the stock by gravity drainage, by vacuum, and by press rolls. Product with additional layers can be produced by using additional headboxes. Until the fiber sheet has dried sufficiently to support its own weight, it is supported first by the wire screen and then by a moving felt sheet. Water removed from the stock during processing, called white water, is collected and reused in various mill processes. Various sections of the paper machine wet end are vented to the atmosphere or to the interior of the paper machine building.

Paper Machine Dry End (EUGs C3, C6, C9)

The fiber sheet passes from the wet end of the machine to the dry end, where it is heated on drying cylinders. The sheet is then processed on trimming and winding equipment that produces paper rolls of appropriate width and diameter. Product trimmed from rolls and cull resulting from breaks is reprocessed in the dry end pulper. The recovered fiber is returned to the stock preparation area.

Emissions from the dryer section of each machine are vented to the atmosphere. The dry end pulpers and other insignificant emission points vent to the interiors of the paper machine buildings.

Functional Area D - Steam Production

Steam Producing Units

The Valliant Mill currently operates three steam-producing boilers: the Bark Boiler, the Power Boiler, and the Package Boiler. A second power boiler (Power Boiler No. 2) is permitted under Permit No. 96-043-C (M-3), but will not be constructed. As part of the proposed project, the Bark Boiler will be decommissioned, the Power Boiler will be decommissioned from normal operation, with continued operation as a back-up steam generating unit, and a CFB Boiler will be installed. In addition, steam will be produced by the proposed Recovery Furnace (EUG E3c) through waste heat recovery.

Steam from the boilers and Recovery Furnace feeds a common steam header. From the header, the steam may be used to generate electricity. As part of the project, Weyerhaeuser proposes to upgrade the electric generating capacity of the Valliant Mill. Steam extracted from the generator and steam that bypasses the generator is fed into the steam distribution system for use in various processes. Steam from the Package Boiler feeds directly into the steam distribution system.

The CFB Boiler will burn a variety of fuels in varying combinations and amounts. Fuels will include, but are not limited to coal, wood and bark residuals, OCC rejects, wastewater treatment sludge, oil, natural gas, petroleum coke (petcoke), and NCGs/SOGs. Used oils from mill equipment may also be added to the CFB Boiler fuel mixture. Exhaust gases will be emitted to the atmosphere through a shared stack with the new Recovery Furnace.

The existing Bark Boiler (to be decommissioned) can burn fuels including, but not limited to, coal, wood and bark residuals, OCC rejects, wastewater treatment sludge, oil, used oil from the mill, natural gas, petcoke, methanol, and NCGs/SOGs. Its emissions discharge through a dedicated stack.

The existing Power Boiler can burn natural gas, oil, and propane. Exhaust gases are emitted to the atmosphere through a shared stack with the Tall Oil Scrubber, existing Recovery Furnace and Spent Liquor Mix Tank (existing Main Stack). As part of the proposed project, the Power Boiler will be decommissioned from normal operation, with continued operation as a back-up steam generating unit. The Power Boiler will be used in two different operating scenarios: (1) supplemental steam production and (2) backup steam production. During supplemental steam production, the Power Boiler will be operated with both the CFB Boiler and the Recovery Furnace in operation. During backup steam production, the Power Boiler will replace the steam-generating capacity of either the CFB Boiler or the Recovery Furnace not in operation. The Package Boiler burns only natural gas. Its emissions discharge through a dedicated stack.

Functional Area E - Chemical Recovery

Turpentine Recovery System (EUG E1)

The Turpentine Recovery System condenses turpentine from vapors collected from equipment in the Digester areas. The turpentine that is recovered is sold as a by-product. The non-condensable fractions of these vapors are currently combusted in the NCG Thermal Oxidizer or in the existing Lime Kiln. As part of the proposed project, non-condensable vapors will be rerouted to the proposed Recovery Furnace, with the CFB Boiler serving as the primary back-up control device.

In the Turpentine Recovery System for the No. 1 and 2 Digester areas, vapors are condensed to a water fraction, a turpentine (liquid) fraction, and a vapor fraction. The water fraction is collected in a series of tanks before being sent to the steam stripper or sewer. The turpentine fraction flows through a degasser to a turpentine decanter, which separates the turpentine from the remaining water. The water is drawn off and sent to the steam stripper or the sewer. The turpentine flows to the turpentine receiver and then to a storage tank to await loading into trucks. Low volume, high concentration (LVHC) vapors collected from the system are currently sent to the NCG Thermal Oxidizer or to the Lime Kiln. As part of the proposed project, vapors will be rerouted to the proposed Recovery Furnace, with the CFB Boiler serving as the primary back-up control device.

Turpentine storage and loading facilities, the pump tank that receives liquid from the cyclone separators, and the collection tank are insignificant emission sources that are vented to the atmosphere.

Spent Liquor Concentration (EUG E2a and Evaporator Sump Vent E2b)

Spent pulping liquor collected in the weak liquor storage tanks is concentrated before it is processed in the Recovery Furnace. Transfers of spent liquor to or from off-site locations may be accomplished at any point in these processes.

Liquor is concentrated by sending it to a multiple-effect evaporator system, where non-contact steam is used to evaporate water from the liquor. Spent liquor leaving the evaporators may be sent to on-site storage, transferred off-site, or sent on for further concentration.

During the evaporation process, a fatty substance called soap is removed from the spent liquor by soap skimmers. The soap is sent to the Tall Oil Plant (EUG E8) for conversion into tall oil, which is sold as a product.

As part of the proposed project, changes will be made to the spent liquor concentration area to enable the Valliant Mill to achieve the target production.

Recovery Furnace (EUG E3c)

As part of the proposed project, the existing Recovery Furnace (EUG E3b) will be decommissioned and replaced with a new Recovery Furnace (EUG E3c). The new Recovery Furnace will serve in a similar capacity as the decommissioned unit.

The Recovery Furnace is used to recover process chemicals from spent liquor from the spent liquor concentration area (EUGs E2a and E2b) or spent liquor obtained from off-site. Prior to being burned, the spent liquor may pass through the Spent Liquor Mix Tanks (EUG E3d), where it may be mixed with particulate matter captured in the Recovery Furnace’s electrostatic precipitator (ESP).

A molten inorganic residue called smelt forms in the Recovery Furnace as a result of the burning of spent liquor. The smelt is drawn off into Smelt Dissolving Tanks (formerly EUG E4) and used to initiate the causticizing process that regenerates cooking chemicals.

As part of the proposed project, the new Recovery Furnace will become the primary control device for NCGs and SOGs, which will be rerouted from the NCG Thermal Oxidizer. The new CFB Boiler will serve as the primary backup control device for NCGs and SOGs. The NCG Thermal Oxidizer is proposed to be decommissioned as part of the project; however, it will be kept available in the event of extenuating circumstances that prevent either the Recovery Furnace or the CFB Boiler from combusting NCGs/SOGs.

In addition to burning spent liquor and combusting NCGs/SOGs, the Recovery Furnace also uses natural gas and is capable of burning other materials that may contain spent cooking chemicals, such as soap from the evaporators, brine from the tall oil reactor, and turpentine. Heat produced by the Recovery Furnace is used to generate steam. Exhaust gases will be emitted to the atmosphere through a shared stack with the proposed CFB Boiler.

Smelt Dissolving Tank (EUG E4b)

Smelt from the Recovery Furnace flows into the Smelt Dissolving Tanks, where it is dissolved in water or in weak wash, which is water that has been used in the Causticizing System to wash lime mud. The resulting solution, called green liquor, is sent to the Green Liquor Clarifier (EUG E6) for further processing. As part of the proposed project, the existing Smelt Dissolving Tanks (EUG E4a (formerly, EUG E4)) will be replaced with new tanks. Airflow from the new Smelt Dissolving Tanks (EUG E4b) will be routed through the new Recovery Furnace as combustion air make-up. Therefore, the new Smelt Dissolving Tanks will not be emissions units.

Lime Slakers (EUG E5)

The Lime Slakers mix lime with green liquor to initiate the causticizing process that regenerates cooking liquor. The lime is fed from lime bins that are filled either from the Lime Kilns or by lime transported from off-site. Green liquor enters the Slakers from the green liquor clarifier, from green liquor storage, or from off-site sources. The mixture of green liquor and lime flows from the Slakers through classifiers, which remove unreacted lime and other debris, to the Causticizers.

Causticizing Area (EUG E6)

In the Causticizing area, cooking liquor is regenerated by reacting green liquor from the Smelt Dissolving Tanks with calcium oxide (quick lime). The lime is recovered and re-used in this process.

Green liquor from the Smelt Dissolving Tanks (or from off-site sources) flows to the Green Liquor Clarifier, where heavy particles, such as undissolved smelt, are allowed to settle out. The settled material, known as dregs, goes to the dregs filter. The filtrate is returned to the Green Liquor Clarifier, and the remaining dregs are sent to the process sewer, disposed, or transferred off-site.

Clarified green liquor can be sent to storage, the Digesters, the Lime Slakers, or off-site destinations. After being mixed with lime in the Slakers, the green liquor goes through a series of Causticizers that provide the residence time needed for the lime to react with the green liquor to regenerate the cooking liquor.

The cooking liquor from the Causticizers flows into clarifiers. The clarified cooking liquor (or cooking liquor from off-site sources) is stored, used in the Digesters, or transferred off-site. The material that settles to the bottom of the cooking liquor clarifiers is lime mud (principally calcium carbonate). The lime mud is washed with water in a Lime Mud Washer. The overflow from the Lime Mud Washer goes to weak wash storage for later use in the Smelt Dissolving Tanks and other areas. The washed lime mud is sent to storage tanks and from there to a Lime Mud Filter. The filtered lime mud will be calcined in either of the Lime Kilns (EUGs E7a and E7b), converting it back to calcium oxide. This Lime Kiln product is transported to the lime bins. If the Lime Kilns are not operating, the lime mud is landfilled or transferred off-site.

Lime Kilns (EUGs E7a and E7b)

Weyerhaeuser is proposing to construct a new Lime Kiln (EUG E7b) to supplement the function of the existing Lime Kiln (EUG E7a [formerly, EUG E7]). Both Lime Kilns will serve a similar function in the chemical recovery process.

Lime mud from causticizing is calcined in the Lime Kilns to regenerate quick lime. The existing Lime Kiln's burner modification allows the kiln to combust a combination of natural gas and petcoke as fuel (as documented in a Tier I Construction Permit application submitted April 15, 2004). The proposed Lime Kiln will also combust a combination of natural gas and petcoke as fuel.

The regenerated quick lime is transferred to the Lime Bins, which feed the Slakers (EUG E5). The Lime Bins are vented to the Lime Kiln combustion air make-up.

Tall Oil Plant (EUG E8)

Tall oil is a heavy organic oil recovered and sold for various commercial uses. It is produced by the Tall Oil Plant from the soap collected during spent liquor evaporation (EUGs E2a and E2b). Tall oil is produced by charging the Tall Oil Reactor with soap, water, and sulfuric acid. The reactor and mixture are then heated to produce a batch of tall oil.

After the reaction, the contents of the tall oil reactor settle into three layers. The tall oil itself rises to the top of the reactor, from where it is withdrawn to wet tall oil storage tanks. The middle layer is a sludge that contains lignin and other organic materials. This sludge is drawn off into a sludge storage tank. A predominantly sodium sulfate brine solution collects at the bottom of the reactor.

The tall oil is transferred from the storage tanks directly to transport vessels or to another storage tank. Tall oil can be loaded into transport vessels from this storage tank. The sludge is transferred back to the tall oil reactor, caustic is added, and the reactor is heated again in a process known as lignin cook. The resulting material is returned to the evaporator area and mixed with spent liquor for chemical recovery.

A packed bed scrubber controls emissions of total reduced sulfur (TRS) from the tall oil reactor, the wet tall oil tanks, and the brine tank. This scrubber is vented to a shared stack with the Power Boiler, existing Recovery Furnace and Spent Liquor Mix Tank (existing Main Stack).

Storage Vessels (EUGs E9 and E10)

Various lower vapor pressure organic liquids, such as black liquors, tall oil, soaps, and fuel oil, are stored in tanks and other vessels at the Valliant Mill (EUG E9). Other volatile organic liquids, such as turpentines and gasoline fuel, are stored in smaller tanks at the Valliant Mill (EUG E10).

<u>Functional Area F - Miscellaneous Processes</u>

Woodyard (EUG F1)

Woodyard operations include the receipt, storage, and handling of fiber source materials and solid fuels.

Fiber Source Materials

Fiber source materials, such as wood chips, are received by railroad or truck. Railcar rollovers and truck lift dumpers are used to unload the material into receiving pits. The received materials can be stored for later retrieval or conveyed directly to the screening operation.

Material to be stored is stockpiled into storage piles by stackers. Material can be removed from the storage piles by reclaimers. Reclaimed material is transferred to chip screening/conditioning (EUGs F7 and F9) and then to chip silos. Undersized (fine) rejects from the scalping screens are conveyed to the Bark Boiler fuel storage pile feed conveyor. Oversized rejects from the scalping screens are either landfilled or added to the Bark Boiler fuel storage pile. This fuel handling system will supply the CFB Boiler after it has been constructed. The fiber source material is transferred as needed from the chip silos to the chip bins in the Digester areas (EUGs A1, A2, and A3).

Conveyors and transfer points in the fiber source material handling system are partially covered and/or enclosed. This serves to reduce the potential for fugitive particulate emissions from material handling operations.

Solid Fuels

Solid fuels are received by railroad or truck. After receipt, the fuels are conveyed to the fuel storage pile. Oversized materials diverted from the fiber source processing/storage area pass through a hogger for size reduction before being stockpiled. Fuel reclaimed from the storage pile is conveyed directly to the Bark Boiler (or after construction, the CFB Boiler.)

Conveyors and transfer points in the fuel handling system are partially covered and/or enclosed. This serves to reduce the potential for fugitive particulate emissions from material handling operations.

Coal Material Handling (EUG F1a & F1b)

Coal is received by railroad or truck. After receipt, the fuels are transferred to the bark boiler conveyor or to the fuel storage pile

Facility Traffic (EUG F2)

Heavy trucks and other vehicles regularly travel on paved and unpaved roads within the Valliant Mill. These vehicles are expected to cause fugitive dust emissions by the action of their tires on the surface of the roads.

Any airborne dust generated by vehicle traffic is emitted directly to the atmosphere. The roads on which these vehicles travel are in good repair, and paved roads are cleaned periodically to minimize the extent of fugitive dust emissions. Unpaved roads are periodically treated to reduce fugitive dust emissions.

Facility vehicles are typically fueled onsite from a gasoline fuel tank (EUG E10). Vehicle traffic occurs in part because of the receipt of raw materials, the shipping of finished products, and the receipt of materials used in the various processes at the Valliant Mill.

Wastewater Treatment System (EUG F3a)

The Valliant Mill Wastewater Treatment System consists of the Bark Ash Dewatering System, the Primary Effluent Clarifier, a Sludge Dewatering Operation, Aerated Stabilization Basins, and Emergency Storage Ponds. With the exception of the Sludge Dewatering Operation, the Wastewater Treatment System components are open to the atmosphere. The Sludge Dewatering Operation is housed in a building with openings (e.g., windows) to the atmosphere. Mainly VOC and reduced sulfur compounds contained in mill wastewater are emitted from the system components. A portable diesel stormwater pump (EUG F6) for stormwater management is utilized as needed.

The Bark Ash Dewatering System receives liquids from the bark ash sand tank. Solids that settle in the Dewatering Ponds are landfilled. The liquid overflow from the Dewatering Ponds is sent to the Runoff Pond. From the Runoff Pond, water overflows to an Aerated Stabilization Basin, while some is recirculated to the bark ash sand tank. The No. 1 Aerated Stabilization Basin can be bypassed, either to another basin or to the National Pollutant Discharge Elimination System (NPDES)-permitted outfall.

Other mill wastewater streams are conveyed to the wastewater treatment area by the process sewer system. These streams pass through a bar screen to the Primary Effluent Clarifier, or bypass the clarifier and mix directly with the overflow from the Runoff Pond. Solids from the primary clarifier go to the Sludge Dewatering Operation. Solids from this operation will either be used as fuel in the CFB Boiler or landfilled. The liquid from sludge dewatering is returned to the Primary Effluent Clarifier. Liquid from the clarifier combines with water from the Runoff Pond. Microbial nutrients may be added to the clarifier effluent to aid biodegradation of organic materials in the liquid. If necessary, clarifier effluent and runoff pond effluent can be sent to emergency holding ponds. Chemical may be used to control WWTS H_2S.

From the No. 1 Aerated Stabilization Basin, wastewater is either discharged or enters the No. 2 Aerated Stabilization Basin for final settling, biodegradation, and clarifying. The effluent from the No. 2 Aerated Stabilization Basin is discharged via the NPDES-permitted outfall. The

Aerated Stabilization Basins also receive storm water runoff from various points within the Valliant Mill, including the Landfill Collection Pond and the Chip Pile Collection Pond.

Wastewater Pipeline (EUG F3b)

A wastewater pipeline transfers wastewater effluent from the Valliant Mill to the Red River. Under normal operating conditions, effluent from the Valliant Mill treatment ponds flows to a 48-inch diameter pipeline. The effluent then typically flows by gravity approximately six miles to a collection box. The collection box is open to the atmosphere and is the emission point for any hydrogen sulfide (H_2S) formed in the pipeline. From the collection box, the effluent flows to a 200-foot diffuser at the bottom of the Red River. During periods of heavy rainfall, pumps can be operated to accommodate the increased flow rates.

NCG Collection and Thermal Oxidation (EUG F4)

Many sources of NCGs are vented to one of two collection systems for burning. The LVHC streams are relatively low-flow-rate, high-concentration sources of NCGs, whereas the HVLC streams produce more total gas flow but much lower concentrations of NCGs. The following sources of concentrated NCGs are vented to the LVHC system:

- Turpentine recovery condensers
- Turpentine decanters
- Turpentine recovery underflow tanks
- Turpentine degassers
- Turpentine receiver tank
- No. 3 Digester Area flash steam condensers
- Evaporator hotwells
- Steam stripper system

The steam stripper feed tank (EUG F10) collects and routes condensates from various processes at the facility to the LVHC system. The stripper off-gas (SOG) from the steam stripper is routed directly to the NCG Thermal Oxidizer via an individual line.

The chip bins and digester surge tanks are vented to the HVLC system (EUG F4b). NCGs from the No. 1 Digester chip bin is routed directly to the NCG Thermal oxidizer through an individual line.

Currently, the primary control device for the collected NCGs is the NCG/SOGs Thermal Oxidizer. However, as part of the proposed project, NCGs/SOGs will be rerouted to the proposed Recovery Furnace, with the CFB Boiler serving as the primary back-up control device. The NCG Thermal Oxidizer is proposed to be decommissioned as part of the project; however, it will be kept available in the event of extenuating circumstances that prevent either the Recovery Furnace or the CFB Boiler from combusting NCGs/SOGs.

During certain start-up operations and upset conditions, the NCG streams may be released to the atmosphere for a relatively short time for safety reasons. These are recognized technological limitations for purposes of excess emissions reporting (OAC 252:100-9-1).

Landfill Operations (EUG F5)

A variety of solid wastes are generated as part of the manufacturing processes at the Valliant Mill. Wastes generally are transported via trucks from the Valliant Mill to the on-site Solid Waste Disposal facility (landfill) located south of the manufacturing complex. The trucks regularly travel back and forth between the landfill and manufacturing areas. The majority of the roads in the manufacturing complex are paved, while those in the landfill area are unpaved.

Vehicle traffic related to landfill operations may cause fugitive dust emissions by the action of tires on the surface of the roads. In addition, the unloading of waste materials from trucks into the landfill and other associated waste handling operations may generate small amounts of fugitive dust emissions. To limit fugitive emissions, paved roads are periodically cleaned and unpaved roads are periodically treated.

Wood Chip Screening & Conditioning (EUGs F7 and F9)

The Valliant Mill operates wood chip screening and conditioning equipment for processing wood chips prior to being pulped. This area currently consists of bar screens, chip conditioners, and two air density separators. A third air density separator will be installed as part of the proposed project. Emissions from the bar screens and chip conditioners are fugitive in nature. The three air density separators will vent directly to the atmosphere.

Steam Stripper System (EUG F10)

The steam stripper feed tank (EUG F10) collects and routes condensates from various processes at the facility to the LVHC system. The stripper off-gas (SOG) from the steam stripper is routed directly to the NCG Thermal Oxidizer via an individual line.

Miscellaneous Insignificant Activities (EUG F11)

The Valliant Mill has several activities that are insignificant in nature such as storage tanks and emergency engines.

Wood Chipping Operation (EUG F12)

The Valliant Mill is currently constructing a wood chipping operation consisting of unloading and conveying equipment, a debarker, and a chipper. A log crane system will unload logs from incoming trucks and place them on a pile or on the system in feed conveyor. A debarking drum will be fed by a conveyor from the log crane system to remove the outer layer of bark from the incoming logs. Bark removed from the logs will be sent from the enclosed bark chutes under the drum, and will then be conveyed to the bark handling and storage system. A chipper driven by an electric motor will produce wood chips with a uniform size from the debarked logs. A conveyor will transport chips to the Valliant Mill’s chip outstacking and recovery systems. Emissions from this operation will be fugitive in nature.

Petcoke Handling Systems (EUGs F13 and F14)

The Valliant Mill submitted a Tier I Construction Permit Application (dated April 15, 2004) to DEQ for the construction of a petcoke handling system (No. 1) to supply fuel for the existing Lime Kiln. A second petcoke handling system for the new Lime Kiln is planned as part of the proposed project. Both systems operate in a similar manner, as described on the following page.

Petcoke will be delivered to the mill via trucks. The petcoke will be transferred from the truck trailer to a storage silo using pneumatic conveyance. The silo will be equipped with a bin vent that allows for air displacement when the silo is being filled with petcoke. The bin vent will be equipped with a filter to aid in product recovery. From the storage silo, the petcoke will be pneumatically conveyed to the kiln burners.

SECTION IV. EQUIPMENT

The numbering of emission points is repeated here from the permit application, e.g. "E-A4,C." The applicant has requested that heat input capacity for several units be kept confidential.

EUG A1 – No. 1 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	#1 Pre-Steaming Chip Bin	Pre-1972/1998/2005 (Planned)
	#1 Steaming Vessel	
	#1 Digester	
	#1 Surge Tank	
	1A Stage Flash Tank	
	1B Stage Flash Tank	
	Second Stage Flash Tank	
	Secondary Flash Tank	

EUG A2 – No. 2 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	#2 Chip Bin	Pre-1972/1998/2005 (Planned)
	#2 Steaming Vessel	
	#2 Digester	
	#2 Surge Tank	
	Primary Flash Tank	
	Parallel Primary Flash Tank	
	Secondary Flash Tank	

EUG A3 – No. 3 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	#3 Chip Bin	Pre-1972/1998/2005 (Planned)
	#3 Steaming Vessel	
	#3 Digester	
	#3 Surge Tank	
	Primary Flash Tank	
	Secondary Flash Tank	

EUG A4 – 1 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A4	No. 1 OCC Plant	1981/ 2005 (planned)

The OCC Plants are defined by the Pulp & Paper Industry MACT as "secondary fiber operations," subject to the MACT only if bleaching were to occur. No bleaching is conducted at this plant.

EUG A5 – No. 2 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A5	No. 2 OCC Plant	1990/2005 (planned)

EUG A6 – Makedown Pulper		
Emission Point	**EU Name/Model**	**Construction Date**
A6	Makedown Pulper	Pre-1972

EUG A7 – No. 3 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A7	No. 3 OCC Plant	2000/2005 (planned)

EUG A8 – OCC Lightweight Rejects Handling System		
Emission Point	**EU Name/Model**	**Construction Date**
A8 (baghouse stack)	OCC Lightweight Rejects Handling System	1990/2001/2005 (planned)
	OCC Lightweight Rejects Receiving Bin	

EUG B1 – No. 1 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B1	Brownstock Washer 1	Pre-1972

EUG B2 – No. 2 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B2	Brownstock Washer 2	Pre-1972/1981

EUG B3 – No. 3 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B3	Brownstock Washer 3	Pre-1972/1974

EUG B4 – No. 4 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B4	Brownstock Washer 4	2005 (Planned)

This unit is a “semi-chemical” operation. It is therefore not subject to the MACT for the Pulp and Paper Industry. 40 CFR 63.443(b) specifies standards only for the LVHC systems in a semi-chemical operation, but pulp washing is defined in 40 CFR 63.441 to be a HVLC operation.

EUG C1 – No. 1 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C1	No. 1 Paper Machine (stock preparation)	Pre-1972/1990/ 1996/2005 (planned)

EUG C2 – No. 1 Paper Machine (Wet End) **EUG C3 – No. 1 Paper Machine (Dry End)**		
Emission Point	**EU Name/Model**	**Construction Date**
C2,A	Fourdrinier	Pre-1972/1990/ 1996/2005 (planned)
C2,B	Vacuum Pumps/ Vacuum Flume	
C2,D	Press Section	
C3,A	Dryer Section	

The “Fourdrinier” operation refers to a rotating cylindrical wire mesh screen used for draining water from pulp.

EUG C4 – No. 2 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C4	No. 2 Paper Machine (stock preparation)	Pre-1972 / 2000 /2005 (planned)

EUG C5 – No. 2 Paper Machine (Wet End) **EUG C6 – No. 2 Paper Machine (Dry End)**		
Emission Point	**EU Name/Model**	**Construction Date**
C5,A	Fourdrinier	Pre-1972 / 2000 /2005 (planned)
C5,B	Press Section	
C5,D	Vacuum Pumps/ Vacuum Flume	
C6,A	Dryer Section	

EUG C7 – No. 3 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C7	No. 3 Paper Machine (stock preparation)	1981 / 2002 /2005 (planned)

EUG C8 – No. 3 Paper Machine (Wet End) **EUG C9 – No. 3 Paper Machine (Dry End)**		
Emission Point	**EU Name/Model**	**Construction Date**
C8,A	Fourdrinier	1981 / 2002 /2005 (planned)
C8,B	Press Section	
C8,D	Vacuum Pumps/ Vacuum Flume	
C9,A	Dryer Section	

EUG D1 – Bark Boiler-Decommissioned

EUG D2 – No. 1 Power Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
Main Stack	No. 1 Power Boiler	Confidential	Pre-1972

This boiler has been decommissioned from normal operation, with continued operation as a supplemental steam source and a backup steam generating unit. The facility has taken limits on this previously grandfathered boiler.

EUG D3 – Package Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
D3	Package (gas-fired) Boiler	Confidential	Pre-1972/1985

This unit was constructed in Michigan in 1969, then relocated to Valliant in 1985.

EUG D4 – No. 2 Power Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
D4	No. 2 Power Boiler	Confidential	Permitted; will not be constructed

EUG D5 – CFB Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
D5	CFB Boiler	Confidential	2005 (planned)

EUG E1 – Turpentine Recovery System		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	2-Stage Condenser (No. 1 Fiber Line)	Pre-1972/1989
	Trim Condenser	
	Degasser No. 1	
	Turpentine Decanter No. 1	
	Underflow Tank No. 1	
	Mixed Underflow tank	
	Primary Condenser	
	Secondary Condenser (No. 2 Fiber Line)	
	Degasser No. 2	
	Turpentine Decanter No. 2	
	Underflow Tank No. 2	
	Turpentine Receiving Tank	
	Flash Steam Condenser (No. 3 Fiber Line)	

EUG E2a – Spent Liquor Concentration		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	No. 1 Evaporator Hotwell	Pre-1972/1974/1981 / 2000
	No. 2 Evaporator Hotwell	

Evaporators are defined by 40 CFR Part 63, Subpart S to be an “LVHC” system.

EUG E2b – Evaporator Sewer Sump		
Emission Point	**EU Name/Model**	**Construction Date**
E2b,A	Evaporator Sewer Sump	Pre-1972

The evaporator sump is part of the wastewater collection system. As such, it does not meet the definitions in the Pulp & Paper MACT for either “evaporator system” or “process wastewater treatment system.”

EUG E3a – Spent Liquor Mix Tank-Decommissioned		
Emission Point	**EU Name/Model**	**Construction Date**
Main Stack	Spent Liquor Mix Tank/Spent Liquor Day Tank	Pre-1972/1991

EUG E3b – Recovery Furnace-Decommissioned

EUG E3c – Recovery Furnace		
Emission Point	**EU Name/Model**	**Construction Date**
E3c	Recovery Furnace	2005 (planned)

EUG E3d – Spent Liquor Mix Tank		
Emission Point	**EU Name/Model**	**Construction Date**
E3d	Spent Liquor Mix Tank	2005 (planned)

EUG E4a – Smelt Dissolving Tanks-Decommissioned		
Emission Point	**EU Name/Model**	**Construction Date**
E4a (Smelt Dissolving Tanks Stack)	Smelt Dissolving Tank "A"	Pre- 1972
	Smelt Dissolving Tank "B"	

EUG E4b – Smelt Dissolving Tanks		
Emission Point	**EU Name/Model**	**Construction Date**
E3c	Smelt Dissolving Tank "A"	2005 (planned)
	Smelt Dissolving Tank "B"	2005 (planned)

EUG E5 – Lime Slakers		
Emission Point	**EU Name/Model**	**Construction Date**
E-E5, A (Lime Slaker Scrubber Stack)	No. 1 Lime Slaker	Pre-1972/1997
E-E5, B (Lime Slaker Scrubber Stack)	No. 2 Lime Slaker	

Permit No. 96-043-C (PSD) required that the stacks be extended or control devices added to reduce ambient PM impacts. This has been achieved.

EUG E6 – Causticizing System		
Emission Point	**EU Name/Model**	**Construction Date**
E6 (2 Stacks)	No. 1a Causticizer	Pre-1972/2001
	No. 2 Causticizer	
	No. 1b Causticizer	
	No. 3 Causticizer	

EUG E7a – Lime Kiln No. 1		
Emission Point	**EU Name/Model**	**Construction Date**
E7,A (Lime Kiln) Stack	Lime Kiln No. 1	Pre-1972/1998
	No. 1 Lime Bin	
	No. 2 Lime Bin	
	No. 3 Lime Bin	

The Lime Kiln is subject to 40 CFR Part 63, Subpart S as a back-up air pollution control device. Subpart MM was promulgated on January 12, 2001, to regulate lime kilns directly, and the compliance date was March 13, 2004. Once the new CFB is built, the lime kiln will no longer be used as a back-up device.

EUG E7b – Lime Kiln No. 2		
Emission Point	**EU Name/Model**	**Construction Date**
E7b,B (Lime Kiln) Stack	Lime Kiln No. 2	2005 (planned)
	No. 4 Lime Bin	
	No. 5 Lime Bin	

EUG E8 – Tall Oil Plant		
Emission Point	**EU Name/Model**	**Construction Date**
Main Stack	Tall Oil Plant	Pre-1972/1989

A scrubber was added to this unit in 1989. That addition reduced VOC emissions, therefore it was not defined as a “modification” requiring permitting. This EUG is a HVLC system, for which no standards are specified for existing equipment under the Pulp & Paper Industry MACT.

EUG E9 – Organic Liquid Storage Vessels			
Emission Point	**EU Name/Model**	**Capacity, Gallons**	**Construction Date**
164100010	No. 1 Weak Black Liquor Tank	793,090	1995
164100110	No. 2 Weak Black Liquor Tank	793,090	1995
164100210	Boilout Tank	426,263	1991
164101310	51% Black Liquor Tank	793,090	1994
164101710	No. 2 Fuel Oil Storage Tank	1,523,381	1990
164101810	Neutral-Sulfite Semi-Chemical (NSSC) Weak Liquor Tank	842,428	1990
164102511	68% Black Liquor Storage Tank	603,400	1995
E-E2,L	“Super Bowl” Temporary Storage Area	10,000,000	1990
164110110	Foul Condensate Storage Tank	350,000	2000
174102010	No. 2 Green Liquor Storage Tank	>20,000	1997
--	Spent Liquor Mix Tank	13,736	1997 (to be decommissioned)

40 CFR Part 63, Subpart S affects only “new” liquor storage tanks; the black liquor storage tanks in this EUG are considered “existing” by the definitions in Subpart S.

EUG E10 – Small Volatile Organic Liquids Storage Tanks			
Emission Point	**EU Name/Model**	**Capacity, Gallons**	**Construction Date**
GAS-01	Gasoline Fuel Tank	1,950	1987
034120510	Turpentine Storage Tank	28,000	1971
Main Stack	Tall Oil Tank	153,000	1970

EUG F1 – Woodyard		
Emission Point	**EU Name/Model**	**Construction Date**
F1 (fugitive emissions)	Woodyard	Pre-1972

EUG F1a – Coal Material Handling (Bark Boiler)		
Emission Point	**EU Name/Model**	**Construction Date**
---	Coal Material Handling (Bark Boiler)	2004

EUG F1b – Coal Material Handling (New)		
Emission Point	**EU Name/Model**	**Construction Date**
F1b	Coal Material Handling (New)	2005 (planned)

EUG F2 – Plant Traffic Road Emissions		
Emission Point	**EU Name/Model**	**Construction Date**
F2 (fugitive emissions)	Plant Traffic on Roads	Pre-1972

EUG F3a – Evaporator Sewer Sump		
Emission Point	**EU Name/Model**	**Construction Date**
F3a,A	Evaporator Sewer Sump	Pre-1972

The evaporator sump is part of the wastewater collection system. As such, it does not meet the definitions in the Pulp & Paper MACT for either "evaporator system" or "process wastewater treatment system."

EUG F3b – Wastewater Treatment System		
Emission Point	**EU Name/Model**	**Construction Date**
F3b (fugitive emissions)	Landfill Collection Pond	1991
	Chip Pile Stormwater Runoff Collection Pond	1991
	Process Sewer	Pre-1972
	Primary Effluent Clarifier	Pre-1972
	No. 1 Aerated Stabilization Basin	Pre-1972
	No. 2 Aerated Stabilization Basin	Pre-1972
	No. 1 Liquor Pond	1983
	No. 2 Liquor Pond	1983
	No. 3 Liquor Pond	1983
	No. 6 Liquor Pond	1983
F3,H	Sludge Press	1991
F3,I	Sludge Press	1991

EUG F4a – NCG Collection and Thermal Oxidation System – LVHC EUG F4b – NCG Collection and Thermal Oxidation System – HVLC		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), or F4 (NCG thermal oxidizer)	Thermal Oxidation System LVHC Collection System HVLC Collection System	1989/ 2000
	No. 1 Digester System	
	No. 2 Digester System	
	No. 3 Digester System	
	Turpentine Recovery System	
	Spent Liquor Concentration	
	Steam Stripper System	
Atmosphere	No. 1 Brownstock Washing Area	
	No. 2 Brownstock Washing Area	

The thermal oxidizer will be decommissioned from normal operation, but it will be kept available as a backup control device.

EUG F5 – Landfill Operations		
Emission Point	**EU Name/Model**	**Construction Date**
F5 (fugitive emissions)	Landfill	Pre-1972

EUG F6 – Diesel Stormwater Pump		
Emission Point	**EU Name/Model**	**Construction Date**
F6	166 HP Diesel Engine Driving a Water Pump	1995

EUG F7 – Wood Chip Screening and Conditioning Unit – No. 3 Line		
Emission Point	**EU Name/Model**	**Construction Date**
F7	Chip Screen	1996
ADS-1	Air Density Separator	1996
F7	Chip Conditioner	1996

There is a gap in the sequence for F8, a unit which has been retired.

EUG F9 – Wood Chip Screening and Conditioning Unit – No. 1 Line		
Emission Point	**EU Name/Model**	**Construction Date**
F9	Chip Screen	1998
ADS-2	Air Density Separator	1998
F9	Chip Conditioner	1998

EUG F10 – Steam Stripper System		
Emission Point	**EU Name/Model**	**Construction Date**
E3c (Recovery Furnace), or D5 (CFB Boiler), F4 (NCG Thermal Oxidizer)	Steam Stripper	1999
	Foul Condensate Storage Tank	

EUG F11 – Miscellaneous Insignificant Activates		
Emission Point	**EU Name/Model**	**Construction Date**
F11-1	100 KW Caterpillar D100PI Emergency Generator	1971
F11-2	150 KW Caterpillar D336 Emergency Generator	1990
F11-3	700 KW Pipeline Basin Emergency Generator	2003
F11-4	25 KW Pipeline Valve House	2003

EUG F12 – Wood Chip Operation		
Emission Point	**EU Name/Model**	**Construction Date**
F12	Debarking Drum	2003
	Chipper	
	Log Truck Road Fugitives	
	On-Site Vehicles*	

*The increase in on-site vehicle emissions is conservatively set at 10% of the total emissions from log truck road fugitives.

The Valliant Mill is currently constructing a wood chipping operation consisting of unloading and conveying equipment, a debarker, and a chipper.

EUG F13 – Petcoke Handling System No. 1 EUG F14 – Petcoke Handling System No. 2		
Emission Point	**EU Name/Model**	**Construction Date**
F13	Petcoke Handling System No. 1	2004 or later
	Petcoke Handling System No. 2	

SECTION V. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application and listed in OAC 252:100-8, Appendix I, are listed below. Recordkeeping for activities indicated with an asterisk, "*", is listed in the Specific Conditions.

- * Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel which are either used exclusively for emergency power generations or for peaking power service not exceeding 500 hours per year. The facility includes two diesel-powered emergency generators totaling 250 kW (310 HP) located at the facility.

- Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). None listed but may be used in the future.

- * Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The facility includes a vehicle gasoline fueling tank (GAS-01).

- Gasoline and aircraft fuel handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards and standards in OAC 252:100-37-15, 39-30, 39-41, and 39-48. The facility includes a diesel fuel dispensing operation.

- * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The facility includes a 28,000-gallon turpentine storage tank (EUG 10).

- Site restoration and/or bioremediation activities of <5 years expected duration. None listed but may be conducted in the future.

- Hydrocarbon-contaminated soil aeration pads utilized for soils excavated at the facility only. None listed but may be conducted in the future.

- * Non-commercial water washing operations and drum crushing operations (less than 2,250 barrels/year) of empty barrels less than or equal to 55 gallons with less than three percent by volume of residual material. The facility includes a drum reclamation operation.

- Hazardous waste and hazardous materials drum staging areas. The facility includes a waste accumulation area.

- Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works (POTW). Stacks or vents for sanitary sewer plumbing traps are also included (i.e., lift station).

- Emissions from landfills and land farms unless otherwise regulated by an applicable state or federal regulation. The facility operates a non-hazardous landfill (EUG F5).

- Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The facility includes additional chemical storage for maintenance purposes.

- Hand wiping and spraying of solvents from containers with less than 1 liter capacity used for spot cleaning and/or degreasing in ozone attainment areas. These operations are conducted as part of routine maintenance.

- * Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant. The application listed a total of 241 insignificant activities. The insignificant activities included in this category are denoted as such in the insignificant activities list maintained on site.

SECTION VI. EMISSIONS

Valliant Mill has examined aspects of all major production areas at the plant to determine the maximum material process rates in order to calculate emission rates. Two distinct process rates for each production area or emissions unit have been determined:

- Maximum Short-Term Process Rate
- Maximum Sustainable Process Rate

The maximum short-term process rate is the maximum production rate achievable in one hour. The maximum sustainable process rate is the annual average of the estimated production rate at which a source can operate within its physical and operational design. In general, short-term (less than or equal to daily averaging periods) emissions are based on the maximum short-term process rates and long-term (greater than daily) average emissions are based on the maximum sustainable process rates.

The Valliant Mill has examined various sources to determine appropriate emission factors, including stack tests, mass balances, U.S. EPA AP-42, NCASI technical bulletins, vendor data, and regulatory limits. In all cases, engineering judgment is applied to determine the most suitable emission factor for a particular source. For most sources and pollutants, the selected "base emission factor" is then multiplied by a "safety factor" to obtain an "adjusted emission factor." A safety factor is applied to account for short-term fluctuations in emissions or anomalous stack test conditions that may have affected a given set of testing results. The adjusted emission factor can then be multiplied by a process rate to calculate an emission rate. It should be noted, however, that not all emission factors incorporate a safety factor.

When a safety factor is employed, the following methodology is used to determine the factor. First, the sample standard deviation for a set of testing data is calculated. The percentage that represents one standard deviation divided by the base factor is then calculated. If one standard deviation represents less than a 20% cushion over the highest measured testing datum, then a default 20% safety factor is assigned. If one standard deviation represents greater than a 20% cushion over the highest measured testing datum, then the calculated percentage is used as the safety factor. In cases where a safety factor is employed, but a standard deviation is not calculated, a default factor of 20% is assigned. The Valliant Mill uses this minimum safety factor of 20%, based on the principle that permit limits must account for short-term fluctuations in actual emission rates.

The application has requested that all emission factors be kept confidential since they were the product of a lengthy and expensive research project.

PROJECT CRITERIA POLLUTANT EMISSIONS SUMMARY AFTER THE MODIFICATIONS

Discharge Point	Operation	PM_{10}		CO		SO_2		NOx		VOC		TRS		Lead		H_2SO_4	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
A4-A6	No. 1,2,3 OCC Plant Fugitives	--	--	--	--	--	--	--	--	9.28	36.89	--	--	--	--	--	--
A8	OCC Lightweight Rejects Baghouse	0.43	1.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B1	No. 1 Brownstock Washing Area	--	--	--	--	--	--	--	--	30.0	122.64	8.03	32.81	--	--	--	--
B2	No. 2 Brownstock Washing Area	--	--	--	--	--	--	--	--	21.67	87.60	5.80	23.43	--	--	--	--
C1-C3	No. 1 Paper Machine	--	--	--	--	--	--	--	--	115.05	419.93	--	--	--	--	--	--
C4-C6	No. 2 Paper Machine	--	--	--	--	--	--	--	--	54.33	202.97	--	--	--	--	--	--
C7-C9	No. 3 Paper Machine	--	--	--	--	--	--	--	--	62.32	209.97	--	--	--	--	--	--
D2	Power Boiler (Supplemental Only) [B]	171.0	299.26	92.99	407.29	1,486.8	933.18	623.7	622.07	6.14	9.36	--	--	0.02	0.10	23.25	35.43
D5	CFB Boiler	47.29	207.12	378.30	1,657.0	378.3	952.75	283.73	828.48	9.46	41.42	--	--	0.19	0.83	4.05	10.21
E2b	Evaporator Sump Vent	--	--	--	--	--	--	--	--	18.81	74.40	15.51	61.35	--	--		
E3c	Recovery Furnace	46.34	179.54	1,351.7	1,047.4	507.85	523.67	353.37	912.69	30.90	119.70	5.79	22.44	0.01	0.06	3.86	14.96
E3d	Spent Liquor Mix Tank	--	--	--	--	--	--	--	--	0.65	2.52	3.58	13.85	--	--	--	--
E5	Lime Slakers No. 1	1.62	4.85	--	--	--	--	--	--	8.15	24.36	0.06	0.17	--	--	--	--
E5	Lime Slakers No. 2	1.62	4.85	--	--	--	--	--	--	8.15	24.36	0.06	0.17	--	--	--	--
E6	Causticizer Vents (combined)	--	--	--	--	--	--	--	--	15.12	45.18	0.11	0.33	--	--	--	--

PROJECT CRITERIA POLLUTANT EMISSIONS SUMMARY AFTER THE MODIFICATIONS – CONTINUED

Discharge Point	Operation	PM_{10}		CO		SO_2		NOx		VOC		TRS		Lead		H_2SO_4	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
E7b	Lime Kiln	3.18	13.91	24.26	106.25	74.04	72.87	79.76	203.59	4.13	18.08	1.52	6.68	0.07	0.32	1.13	1.12
E8	Tall Oil Scrubber	--	--	--	--	--	--	--	--	43.2	189.22	5.60	24.51	--	--	--	--
F1	Woodyard	2.70	2.28	--	--	--	--	--	--	0.33	1.44	--	--	--	--	--	--
F1	Coal Material Storage	0.44	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2	Plant Trucks	4.63	25.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2	Landfill Trucks	1.08	0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3a	Wastewater Treatment System	--	--	--	--	--	--	--	--	111.71	441.82	27.30	119.58	--	--	--	--
F5	Landfill Operations	6.70	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F5	Unloading Dumps	0.88	1.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F7/F9	Chip Thickness Screening and Conditioning System	1.23	4.85	--	--	--	--	--	--	3.90	15.41	--	--	--	--	--	--
F14	Petcoke Silo Bin Vent No. 2	0.10	0.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FW	Plant-Wide Fugitives [C]	--	--	--	--	--	--	--	--	55.03	207.39	7.17	29.79	--	--	--	--
D2, D5, E3c	CFB Boiler, Recovery Furnace, and Power Boiler Annual Summation [D]		386.7		2,704		1,476		1,741		161.1		22.44		0.89		25.17
	TOTALS	289.2	448.6	1,847	2,811	2,447	1,549	1341	1,945	608.3	2,285	80.53	335.1	0.29	1.21	32.29	26.29

A. The CFB Boiler, the new Recovery Furnace, and the new Lime Kiln will each be equipped with a particulate matter control device (e.g., baghouse, electrostatic precipitator) capable of meeting applicable MACT requirements.

B. The emission rates presented for the Power Boiler are for the supplemental steam production scenario only. Emission rates of the backup steam production scenario are tracked part of the summation of the allowable emission rates of the CFB Boiler and the Recovery Furnace.

C. Plant-Wide VOC and TRS fugitive emissions are assumed to be 10% of primary, non-combustion source emissions.

D. On an annual basis for any given pollutant, Weyerhaeuser will ensure that the combined annual emissions of the Power Boiler in backup steam production only, the CFB Boiler, and the Recovery Furnace do not exceed the summation of the allowable annual emission rates of the CFB Boiler and the Recovery Furnace

The post-project emissions of Subchapter 41 compounds for each primary source at the Valliant Mill were determined using emission factors taken from National Council of the Paper Industry for Air and Stream Improvement (NCASI) Technical Bulletins, United States Environmental Protection Agency (U.S. EPA) AP-42 reference documents, or mill data.[2] The following sections discuss each data source.

The following NCASI reports were used to determine the post-project emissions for the Valliant Mill:

- Technical Bulletin 650 –dated June 7, 1993
- Technical Bulletin 676 –dated September 9, 1994
- Technical Bulletin 677 –dated September 23, 1994
- Technical Bulletin 678 –dated October 5, 1994
- Technical Bulletin 680 –dated October 24, 1994
- Technical Bulletin 681 –dated October 31, 1994
- Technical Bulletin 701 –dated October 20, 1995
- NCASI Handbook of Chemical-Specific Information for SARA 313 Form R Reporting

The U.S. EPA AP-42 emission factors used in this report are located in Chapter 1.1 (September 1998), Chapter 1.3(September 1998), Chapter 1.4 (July 1998), Chapter 1.6 (September 2003), and Chapter 3.3 (October 1996) of the U.S. EPA AP-42 reference documents.

MILL DATA

Since every pulp and paper product manufacturing facility is unique, the NCASI bulletins and U.S. EPA AP-42 reference documents do not always contain sufficient data to accurately estimate emissions of all Subchapter 41 compound emissions. When appropriate, engineering judgment was used to apply mill data, which may or may not be specific to the Valliant Mill, to estimate post-project emissions of Subchapter 41 compounds. For example, NCASI technical bulletin emission factors for acrolein were reviewed and adjusted for this analysis. The factors provided in NCASI Technical Bulletin 681 for acrolein were developed based on stack test data from mills without denoting if additives containing acrolein (a common slimacide) was used. Further, the testing program could not verify using GC/MS that acrolein was present in vent gases. Since the Valliant Mill does not use acrolein-based slimacides, it would be inaccurate to estimate acrolein emissions based on this data. Using these data sources, the most conservative (i.e., highest) emission factor was selected to estimate post-project facility-wide emissions, except where engineering judgment was used to select an alternative emission factor. Emissions of HAPs from each unit exempt under OAC 252:100-41-43(a)(3) was excluded.

TOXIC AIR POLLUTANT EMISSIONS SUBJECT TO SUBCHAPTER 41

Toxic	CAS Number	Category	Emissions		De Minimis		>De Minimis
			lb/hr	TPY	lb/hr	TPY	
1,1,1-Trichloroethane	71556	C	6.15E-01	2.22E+00	5.6	6.0	No
1,1,2-Trichloroethane	79005	A	7.26E-01	2.62E+00	0.57	0.6	Yes
1,2,4-Trichlorobenzene	120821	C	3.66E+00	1.32E+01	5.6	6.0	Yes
1,2-Dibromoethene	540498	A	1.04E-01	4.56E-01	0.57	0.6	No
1,2-Dichloroethane	107062	A	1.14E+00	4.12E+00	0.57	0.6	Yes
1,2-Dichloroethylene	540590	C	4.34E+00	1.56E+01	5.6	6.0	Yes
1,2-Dichloropropane	78875	A	6.24E-02	2.73E-01	0.57	0.6	No
1,3-Butadiene	106990	A	4.54E-05	1.99E-04	0.57	0.6	No
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	A	0.00E+00	0.00E+00	0.57	0.6	No
2,4,6-Trichlorophenol	88062	A	0.00E+00	0.00E+00	0.57	0.6	No
2,4-Dinitrophenol	51285	A	0.00E+00	0.00E+00	0.57	0.6	No
2-Chloronaphthalene	91587	C	4.54E-06	1.99E-05	5.6	6.0	No
2-Chlorophenol	26982036	B	4.54E-05	1.99E-04	1.1	1.2	No
2-Methylnaphthalene	91576	A	3.03E-04	1.33E-03	0.57	0.6	No
2-Nitrophenol	88755	B	4.54E-04	1.99E-03	1.1	1.2	No
4-Nitrophenol	88755	B	0.00E+00	0.00E+00	1.1	1.2	No
5-Methyl chrysene		A	1.49E-06	6.51E-06	0.57	0.6	No
Acenaphthene	83329	A	1.29E-04	5.64E-04	0.57	0.6	No
Acenaphthylene	208968	A	1.46E-05	6.40E-05	0.57	0.6	No
Acetaldehyde	75070	B	1.77E+01	6.51E+01	1.1	1.2	Yes
Acetone	67641	NS	2.43E+01	8.84E+01	--	--	No
Acetophenone	98862	C	0.00E+00	0.00E+00	5.6	6.0	No
Acrolein	107028	A	1.19E-02	4.73E-02	0.57	0.6	No
Acrylamide	79061	A	6.68E-03	2.40E-02	0.57	0.6	No
alpha-Pinene	80568	C	1.20E+00	2.43E-01	5.6	6.0	No
alpha-Terpineol	8006391	C	8.89E-03	3.89E-02	5.6	6.0	No
Ammonia	7664417	C	1.27E+01	5.26E+01	5.6	6.0	Yes
Anthracene	1201217	A	1.56E-05	6.85E-05	0.57	0.6	No
Antimony	7440360	B	4.14E-02	1.81E-01	1.1	1.2	No
Arsenic	7440382	A	1.03E-01	4.50E-01	0.57	0.6	No
Barium	7440393	B	6.28E-01	2.73E+00	1.1	1.2	Yes
Benzaldehyde	100527	B	5.70E-01	1.22E-01	1.1	1.2	No
Benzene	71432	A	1.77E-01	6.69E-01	0.57	0.6	Yes
Benzo(a)anthracene	56553	A	9.42E-05	4.13E-04	0.57	0.6	No
Benzo(a)pyrene	50328	A	8.94E-06	3.91E-05	0.57	0.6	No
Benzo(b)fluoranthene	205992	A	3.34E-05	1.46E-04	0.57	0.6	No
Benzo(e)Pyrene	192972	A	0.00E+00	0.00E+00	0.57	0.6	No
Benzo(g,h,i)perylene	191242	B	6.35E-05	2.78E-04	1.1	1.2	No
Benzo(j)fluoranthene	205992	A	0.00E+00	0.00E+00	0.57	0.6	No
Benzo(k)fluoranthene	207089	A	3.35E-05	1.47E-04	0.57	0.6	No
Benzoic Acid	65850	C	7.00E-02	3.07E-01	5.6	6.0	No
Benzyl Chloride	100447	B	0.00E+00	0.00E+00	1.1	1.2	No

FACILITY WIDE TOXIC AIR POLLUTANT EMISSIONS – CONTINUED

Toxic	CAS Number	Category	Emissions		De Minimis		>De Minimis
			lb/hr	TPY	lb/hr	TPY	
Beryllium	7440417	A	3.96E-03	1.74E-02	0.57	0.6	No
Biphenyl	92524	C	0.00E+00	0.00E+00	5.6	6.0	No
bis(2-ethylhexyl)Phthalate	117817	A	0.00E+00	0.00E+00	0.57	0.6	No
Bromoform	75252	C	0.00E+00	0.00E+00	5.6	6.0	No
Bromomethane	74839	A	0.00E+00	0.00E+00	0.57	0.6	No
Cadmium	7440439	A	1.90E-01	8.33E-01	0.57	0.6	Yes
Carbazole	86748	B	3.40E-03	1.49E-02	1.1	1.2	No
Carbon disulfide	75150	B	4.47E-02	1.92E-01	1.1	1.2	No
Carbon Tetrachloride	56235	A	5.39E+00	1.94E+01	0.57	0.6	Yes
Chlorine	7782505	A	0.00E+00	0.00E+00	0.57	0.6	No
Chlorobenzene	108907	C	2.60E-01	9.37E-01	5.6	0.6	No
Chloroform	67663	A	4.98E+00	1.86E+01	0.57	0.6	Yes
Chloromethane	74873	A	0.00E+00	0.00E+00	0.57	0.6	No
Chromium	7440473	A	1.16E-01	5.06E-01	0.57	0.6	No
Chromium+6	7738945	A	1.49E-03	6.52E-03	0.57	0.6	No
Chrysene	218019	A	1.66E-05	7.27E-05	0.57	0.6	No
Cobalt	7440484	A	1.09E-01	4.77E-01	0.57	0.6	No
Copper	7440508	B	1.88E-01	4.85E-01	1.1	1.2	No
Crotonaldehyde	4170303	A	1.87E-02	8.20E-02	0.57	0.6	No
Cumene	98828	C	1.29E+00	5.64E+00	5.6	6.0	No
Cyanide	57125	A	0.00E+00	0.00E+00	0.57	0.6	No
Decachlorobiphenyl	2051243	A	5.11E-07	2.24E-06	0.57	0.6	No
Dibenzo[a,h]anthracene	53703	A	7.00E-05	3.07E-04	0.57	0.6	No
Dichlorobiphenyl	2050682	A	1.40E-06	6.13E-06	0.57	0.6	No
Dimethyl sulfate	77781	A	0.00E+00	0.00E+00	0.57	0.6	No
Di-n-Butyl phthalate	84742	C	0.00E+00	0.00E+00	5.6	6.0	No
Ethanol	64175	B	2.29E+00	9.65E+00	1.1	1.2	Yes
Ethyl chloride	75003	B	0.00E+00	0.00E+00	1.1	1.2	No
Ethylbenzene	100414	C	3.37E-02	1.47E-01	5.6	6.0	No
Ethylene dibromide	106934	A	0.00E+00	0.00E+00	0.57	0.6	No
Ethylene dichloride	107062	A	0.00E+00	0.00E+00	0.57	0.6	No
Ethylene Glycol	107211	C	3.02E-01	1.09E+00	5.6	6.0	No
Fluoranthene	206440	C	8.83E-06	3.87E-05	5.6	6.0	No
Fluorene	86737	A	6.29E-05	2.76E-04	0.57	0.6	No
Formaldehyde	50000	A	8.08E+00	2.95E+01	0.57	0.6	Yes
Heptachlorobiphenyl	28655712	A	1.25E-07	5.47E-07	0.57	0.6	No
Heptachlorodibenzo-p-dioxins	35822469	A	3.78E-06	1.66E-05	0.57	0.6	No
Heptachlorodibenzo-p-furans	67562394	A	4.54E-07	1.99E-06	0.57	0.6	No
Hexachlorobiphenyl	26601-64-9	A	1.04E-06	4.56E-06	0.57	0.6	No
Hexachlorodibenzo-p-dioxins	39227286	B	3.03E-03	1.33E-02	1.1	1.2	No
Hexachlorodibenzo-p-furans	70648269	A	5.30E-07	2.32E-06	0.57	0.6	No
Hexanal	66251	C	1.32E-02	5.80E-02	5.6	6.0	No
Hexane	110543	C	0.00E+00	0.00E+00	5.6	6.0	No

TOXIC AIR POLLUTANT EMISSIONS – CONTINUED

Toxic	CAS Number	Category	Emissions		De Minimis		<De Minimis
			lb/hr	TPY	lb/hr	TPY	
Hydrogen chloride	7647010	C	0.00E+00	0.00E+00	5.6	6.0	No
Indeno(1,2,3,c,d)pyrene	193395	A	5.71E-05	2.50E-04	0.57	0.6	No
Iron	7439896	C	1.87E+00	8.20E+00	5.6	6.0	Yes
Isobutyraldehyde	78842	C	2.27E-02	9.94E-02	5.6	6.0	No
Isophorone	78591	C	0.00E+00	0.00E+00	5.6	6.0	No
Isopropanol	67630	C	3.39E+00	1.43E+01	5.6	6.0	Yes
Lead	7439921	NS	1.75E-01	7.65E-01	--	--	No
Magnesium	7439954	C	7.43E-01	3.25E+00	5.6	6.0	No
Manganese	7439965	C	6.67E-02	2.92E-01	5.6	6.0	No
Mercury	7439976	A	5.54E-02	2.43E-01	0.57	0.6	No
Methane	74828	NS	3.97E+01	1.74E+02	--	--	No
Methanol	67561	C	7.55E+02	2.81E+03	5.6	6.0	Yes
Methyl bromide	74839	A	0.00E+00	0.00E+00	0.57	0.6	No
Methyl chloride	74873	A	0.00E+00	0.00E+00	0.57	0.6	No
Methyl ethyl ketone	78933	C	1.02E+01	3.93E+01	5.6	6.0	Yes
Methyl hydrazine	60344	A	0.00E+00	0.00E+00	0.57	0.6	No
Methyl isobutyl ketone	108101	C	4.26E+00	1.68E+01	5.6	6.0	Yes
Methyl methacrylate	80626	B	0.00E+00	0.00E+00	1.1	1.2	No
Methyl tertiary butyl ether	1634044	B	0.00E+00	0.00E+00	1.1	1.2	No
Methylene chloride	75092	A	1.87E+00	6.86E+00	0.57	0.6	Yes
Molybdenum	7439987	C	5.00E-03	2.19E-02	5.6	6.0	No
Monochlorobiphenyl	--	A	4.16E-07	1.82E-06	0.57	0.6	No
m-p-Xylene	108383	C	2.89E-01	1.07E+00	5.6	6.0	No
Naphthalene	91203	B	1.11E-02	4.84E-02	1.1	1.2	No
n-Hexane	110543	C	7.28E-01	3.05E+00	5.6	6.0	No
Nickel	7440020	A	2.10E+00	9.19E+00	0.57	0.6	Yes
Octachlorodibenzo-p-dioxins	3268879	A	1.25E-04	5.47E-04	0.57	0.6	No
Octachlorodibenzo-p-furans	39001020	A	1.66E-07	7.29E-07	0.57	0.6	No
o-Tolualdehyde	529204	A	1.36E-02	5.97E-02	0.57	0.6	No
o-Xylene	95476	C	2.02E+00	7.95E+00	5.6	6.0	Yes
PAHs	varies	A	4.78E-02	2.09E-01	0.57	0.6	No
p-Cymene	99876	C	6.32E-01	1.28E-01	5.6	6.0	No
Pentachlorobiphenyl	25429-29-2	A	2.27E-06	9.94E-06	0.57	0.6	No
Pentachlorodibenzo-p-dioxins	36088-22-9	A	2.84E-06	1.24E-05	0.57	0.6	No
Pentachlorodibenzo-p-furans	67517480	A	7.94E-07	3.48E-06	0.57	0.6	No
Pentachlorophenol	87865	A	0.00E+00	0.00E+00	0.57	0.6	No
Perylene	198550	B	9.84E-07	4.31E-06	1.1	1.2	No
Phenanthrene	85018	A	1.36E-04	5.94E-04	0.57	0.6	No
Phenol	108952	B	5.45E-01	2.15E+00	1.1	1.2	Yes
Phosphorus	7723140	A	5.68E-02	2.49E-01	0.57	0.6	No
Potassium	7440097	--	7.38E+01	3.23E+02	--	--	No
Propanal	123386	A	6.05E-03	2.65E-02	0.57	0.6	No

TOXIC AIR POLLUTANT EMISSIONS – CONTINUED

Toxic	CAS Number	Category	Emissions		De Minimis		> De Minimis
			lb/hr	TPY	lb/hr	TPY	
Propionaldehyde	123386	C	0.00E+00	0.00E+00	5.6	6.0	No
Propylene	115071	NS	2.99E-03	1.31E-02	--	--	No
p-Tolualdehyde	104870	A	2.08E-02	9.11E-02	0.57	0.6	No
Pyrene	129000	A	3.53E-05	1.55E-04	0.57	0.6	No
Selenium	7782492	C	3.51E-02	1.54E-01	5.6	6.0	No
Silver	7440224	B	3.22E+00	1.41E+01	1.1	1.2	Yes
Sodium	7440235	--	6.81E-01	2.98E+00	--	--	No
Strontium	7440246	C	1.89E-02	8.28E-02	5.6	6.0	No
Styrene	100425	B	7.19E-01	2.62E+00	1.1	1.2	Yes
Sulfuric acid mist	7664939	A	3.36E+01	1.15E+02	0.57	0.6	Yes
Terpenes	68956569	B	9.19E+01	3.31E+02	1.1	1.2	Yes
Tetrachlorobiphenyl	26914330	A	4.73E-06	2.07E-05	0.57	0.6	No
Tetrachlorodibenzo-p-dioxins	1746016	A	0.00E+00	0.00E+00	0.57	0.6	No
Tetrachlorodibenzo-p-furans	51207319	A	1.42E-06	6.21E-06	0.57	0.6	No
Tetrachloroethylene	127184	A	2.06E+00	7.41E+00	0.57	0.6	Yes
Tin	7440315	C	4.35E-02	1.91E-01	5.6	6.0	No
Titanium	7440326	B	3.78E-02	1.66E-01	1.1	1.2	No
Toluene	108883	C	2.44E-01	9.39E-01	5.6	6.0	No
Trichlorobiphenyl	--	A	4.92E-06	2.15E-05	0.57	0.6	No
Trichloroethylene	79016	A	1.11E+00	4.01E+00	0.57	0.6	Yes
Trichlorofluoromethane	75694	C	7.76E-02	3.40E-01	5.6	6.0	No
Vanadium	7440622	A	5.92E-01	2.59E+00	0.57	0.6	Yes
Vinyl Acetate	108054	C	0.00E+00	0.00E+00	5.6	6.0	No
Vinyl Chloride	75014	A	1.03E-01	4.07E-01	0.57	0.6	No
Xylenes	1330207	C	3.31E-04	1.45E-03	5.6	6.0	No
Yttrium	7440655	A	5.67E-04	2.49E-03	0.57	0.6	No
Zinc	7440666	C	1.29E+00	4.34E+00	5.6	6.0	No

Total HAP emissions: 1,125 lb/hr and 4,245 TPY

PSD Evaluation Methodology

A PSD netting analysis is performed in two major steps: (1) evaluating the proposed modification by itself and, if necessary, (2) conducting emissions netting over the contemporaneous period.

1. Compare emissions increases associated with only the proposed modification to the PSD SER thresholds. Emissions increases associated with the proposed modification include increases at new and modified units, as well as "associated emissions increases" at existing, unmodified units. For new, modified, and affected units, emissions increases are determined by subtracting actual emission rates from the proposed potential emission rates for that unit. In accordance with federal [40 CFR 52.21(b)(21)(iii)] and state (OAC 252:100-8-31) regulations, two methods are available to compute past actual emissions:

- Average the emissions from the two years preceding the change or from a two-year period representative of normal operations, or,

- The DEQ may presume that source-specific allowable emissions for a unit are equivalent to the "actual emissions" of a unit.

If emissions increases from the proposed modification alone (without considering any decreases) are below all applicable PSD SERs, then the modification is not significant and is not required to undergo PSD review. If emissions increases from the modification alone are greater than any SER, then the modification must undergo PSD netting to determine PSD applicability for that pollutant. The comparison is conducted on a pollutant-by-pollutant basis, so PSD netting may be required for some pollutants and not for others. Since the Valliant Mill qualifies as one of the 28 PSD source categories for which the 100 TPY major source thresholds applies, emissions increases from fugitive sources, such as roads, must also be included in the PSD netting analysis.

2. If the modification alone is significant, conduct PSD netting. The netting analysis is conducted in three steps: (A) defining the contemporaneous period, (B) identifying contemporaneous emissions increases and decreases, and (C) calculating the net emissions change.

A. Define contemporaneous period. In Oklahoma, the contemporaneous period begins with the date three years prior to the date construction commences on the proposed project and ends with the date the net emissions change from the modification occurs (i.e., when construction is complete and normal operations have begun for the proposed/modified units).

B. Identify emissions increases/decreases. All creditable emissions increases and decreases that occurred at the plant site during the contemporaneous period are summed together. In general, these contemporaneous emissions increases and decreases are calculated as the difference between the average of the last two years of actual emissions prior to the change and the allowable emissions after the change for each individual emissions unit. Any "double-counted" emissions are removed.

C. Calculate net emissions increase. The emissions changes associated with the new modification are added to the contemporaneous increases and decreases to determine the net emissions change. In addition, emission rates previously relied upon in the issuance of a PSD permit are removed from this summation. If the net emissions change of any pollutant exceeds a corresponding PSD SER, then that pollutant is subject to PSD review.

PSD Evaluation for the Proposed Project

A PSD evaluation of the proposed project is discussed in the following subsections for the following criteria pollutants: total particulate matter (PM), particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), carbon monoxide (CO), sulfur dioxide (SO_2), oxides of nitrogen (NO_x), VOC, TRS, lead (Pb), and SAM (H_2SO_4).

Project Emissions Increase

For all new, modified, and affected units, emissions increases are calculated by subtracting the past actual emission rate from the proposed potential emission rate. Using this methodology, the project emissions increases attributable to the proposed project are presented for comparison to PSD SERs in table below.

Total Emission Increases and Decreases

Operation	PM_{10}			CO			SO_2			NOx			VOC			TRS			Lead			H_2SO_4		
*	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC	AE	Pt	PC
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
No. 1,2,3 OCC Plant Fugitives	-	-	-	-	-	-	-	-	-	-	-	-	17.26	36.89	19.63	-	-	-	-	-	-	-	-	-
OCC Lightweight Rejects Baghouse	080	1.90	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. 1 Brownstock Washing Area	-	-	-	-	-	-	-	-	-	-	-	-	64.5	122.6	58.1	31.52	32.81	1.30	-	-	-	-	-	-
No. 2 Brownstock Washing Area	-	-	-	-	-	-	-	-	-	-	-	-	36.1	87.6	51.5	17.65	23.43	5.79	-	-	-	-	-	-
No. 1 Paper Machine	-	-	-	-	-	-	-	-	-	-	-	-	346.2	419.9	73.8	-	-	-	-	-	-	-	-	-
No. 2 Paper Machine	-	-	-	-	-	-	-	-	-	-	-	-	175.3	202.9	27.7	-	-	-	-	-	-	-	-	-
No. 3 Paper Machine	-	-	-	-	-	-	-	-	-	-	-	-	143.1	209.9	66.9	-	-	-	-	-	-	-	-	-
Power Boiler (Supplemental Only) [B]	131.5	299.2	167.7	167.9	407.3	239.4	1,189	933.2	-255	1,026	622	-404	4.46	9.36	4.89	-	-	-	0.02	0.10	0.08	4.60	35.43	30.83
CFB Boiler	0.00	207.1	207.1	0.00	1,657	1,657	0.00	953	953	0.00	829	829	0.00	41.4	41.4	-	-	-	0.00	0.83	0.83	0.00	10.21	10.21
Evaporator Sump Vent	-	-	-	-	-	-	-	-	-	-	-	-	35.55	74.40	38.85	29.20	61.35	32.15	-	-	-	-	-	-
Spent Liquor Mix Tank	-	-	-	-	-	-	-	-	-	-	-	-	1.41	2.52	1.11	7.15	13.85	6.70	-	-	-	-	-	-
Recovery Furnace	0.00	179.5	179.5	0.0	1,047	1,047	0.00	524	524	0.00	913	913	0.00	119.7	119.7	0.00	22.44	22.44	0.00	0.06	0.06	0.0	14.96	14.96
Lime Slakers No. 1	4.29	4.85	0.56	-	-	-	-	-	-	-	-	-	7.94	24.36	16.42	0.10	0.17	0.07	-	-	-	-	-	-
Lime Slakers No. 2	4.29	4.85	0.56	-	-	-	-	-	-	-	-	-	7.94	24.36	16.42	0.10	0.17	0.07	-	-	-	-	-	-
Causticizer Vents (combined)	-	-	-	-	-	-	-	-	-	-	-	-	37.35	45.18	7.83	0.30	0.33	0.03	-	-	-	-	-	-
Lime Kiln	0.00	10.57	10.57	0.00	106	106	0.00	72.87	72.87	0.00	204	204	0.00	18.08	18.08	0.00	6.68	6.68	0.00	0.32	0.32	0.00	1.12	1.12
Tall Oil Scrubber	-	-	-	-	-	-	-	-	-	-	-	-	38.95	189.2	150.3	6.05	24.51	18.46	-	-	-	-	-	-
Fiber Source Storage	1.30	1.87	0.57	-	-	-	-	-	-	-	-	-	0.80	1.19	0.39	-	-	-	-	-	-	-	-	-
Hog Fuel Storage	0.30	0.41	0.11	-	-	-	-	-	-	-	-	-	0.20	0.25	0.05	-	-	-	-	-	-	-	-	-
Coal Material Storage	0.00	0.53	0.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant Trucks	10.19	17.85	7.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* AE: actual emissions, Pt: Potential emissions, PC: Project change

Total Emission Increases and Decreases Continued

Operation	PM_{10}			CO			SO_2			NOx			VOC			TRS			Lead			H_2SO_4		
*	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**	**AE**	**Pt**	**PC**
	TPY	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**	**TPY**
Landfill Trucks	0.29	0.50	0.21	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Treatment System	-	-	-	-	-	-	-	-	-	-	-	-	103.3	441.8	338.5	119.6	119.6	0.00	-	-	-	-	-	-
Landfill Operations	0.04	0.10	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unloading Dumps	1.00	1.85	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chip Thickness Screening and Conditioning System	2.78	4.85	2.07	-	-	-	-	-	-	-	-	-	8.84	15.41	6.58	-	-	-	-	-	-	-	-	-
Petcoke Silo Bin Vent No. 2	0.00	0.45	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant-Wide Fugitives [C]	-	-	-	-	-	-	-	-	-	-	-	-	112.6	207.4	94.78	24.20	29.79	5.59	-	-	-	-	-	-
Bark Boiler (Decommissioned)	104.3	0.00	-104	2,952	0.00	-2,952	101.1	0.00	-101.1	700	0.00	-700	71.3	0.00	-71.3	-	-	0.0	1.40	0.00	-1.40	0.1	0.00	-0.1
Recovery Furnace (old) Decommissioned	278.8	0.00	-278.8	1,631	0.00	-1,631	1,111	0.00	-1,111	614.1	0.00	-614.1	42.27	0.00	-42.27	147.6	0.00	-147.6	-	-	-	9.54	0.00	-9.54
Smelt Dissolving Tank Decommissioned	231.7	0.00	-231.7	119.3	0.00	-119.3	6.35	0.00	-6.35	13.15	0.00	-13.15	65.19	0.00	-65.19	12.7	0.00	-12.7	0.01	0.00	-0.01	-	-	-
NCG Thermal Oxidizer Decommissioned from normal operation	16.85	0.00	-16.85	1.11	0.00	-1.11	112.3	0.00	-112	246.8	0.00	-246.8	1.19	0.00	-1.19	1.41	0.00	-1.41	-	-	-	-	-	-
Emission Increases			583.0			3,049			1,550			1,944			1,153			99.28			1.29			57.12
Emission Decreases			-631.4			-4,703			-1,585			-1,978			-180			-161.7			-1.41			-9.64
Total Project Changes			**-48.8**			**-1,654**			**-35**			**-34**			**973**			**-62.4**			**-0.12**			**47.48**

* AE: actual emissions, Pt: Potential emissions, PC: Project change

Emissions Increases from the Proposed Project

	PM_{10}	CO	SO_2	NO_x	VOC (as carbon)	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Project Increase	583	3,049	1,550	1,944	1,153	99.28	1.29	57.12
PSD SER	15	100	40	40	40	10	0.6	7
Greater than SER?	YES	YES	YES	YES	YES	YES	YES	YES

The emissions increases from the proposed project exceed the respective PSD SER for the following pollutants: PM, PM_{10}, CO, SO_2, NO_x, VOC, TRS, Pb, and SAM. Therefore, a PSD netting analysis is conducted for each of these pollutants.

Project Contemporaneous Period

The Valliant Mill is proposing to begin construction of the proposed project in October 2004, with phased construction continuing thereafter for an extended period of time. Since the proposed changes identified for this project include all foreseeable changes to the Valliant Mill, Weyerhaeuser does not anticipate any other creditable emissions increases or decreases which require consideration during the portion of the contemporaneous window after the commencement of operation. Thus, the only creditable emissions increases and decreases are for projects conducted in the time period of October 2001 through October 2004.

Creditable Emissions Increases And Decreases

During the contemporaneous period defined above, the following four projects with creditable emission increases were conducted at the Valliant Mill:

- The installation of a wastewater pipeline and associated equipment under Permit No. 97-057-C.
- The installation of a wood chipping operation under Permit No. 97-057-C (M-2).
- The installation of coal handling equipment, as discussed in an applicability determination letter submitted to the DEQ on March 25, 2004.
- A lime kiln burner modification project, as submitted in a Tier I Construction Permit application on April 15, 2004.

In addition, Weyerhaeuser is proposing to decommission the following emissions sources as part of the proposed project: the Bark Boiler, the existing Recovery Furnace, the existing Spent Liquor Mix Tanks, the existing Smelt Dissolving Tanks, and the NCG Thermal Oxidizer (from normal operation). Therefore, the past actual emission rates from these units are considered creditable emissions decreases. The Power Boiler will be decommissioned from normal operation, with continued operation as a backup steam generating unit. Therefore, the past actual emission rates for the Power Boiler are subtracted from the future potential emission rates to determine the creditable increase or decrease.

Project Net Emissions Change

In order to determine the total creditable emissions change, the project emissions increases are summed with the contemporaneous increases and decreases. Emission rates previously relied upon in the issuance of a PSD permit is excluded from this calculation, since they are not considered creditable changes.

Net Emissions Change from the Proposed Project

	PM_{10}	CO	SO_2	NO_x	VOC (as carbon)	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Emissions Increase	583	3,049	1,550	1,944	1,153	99.28	1.29	57.12
Emissions Decrease	-631.4	-4,703	-1,585	-1,978	-180	-161.7	-1.41	-9.64
Contemporaneous Emissions	19.12	42.87	36.75	33.83	12.24	9.47	0.12	0.28
Net Emissions Change	-29.28	-1,611	1.75	-0.17	985	-52.95	0	47.76
PSD SER	15	100	40	40	40	10	0.6	7
Greater than SER?	NO	NO	NO	NO	YES	NO	NO	YES

The net emissions changes from the proposed project exceed the respective PSD SER for VOC and SAM. Therefore, a PSD review for each of these pollutants is presented. As the net emissions change for PM, PM_{10}, CO, SO_2, NO_x, TRS, and Pb do not exceed their respective PSD SERs, no further PSD review for these pollutants is required. It should be noted that the net emissions change is based on the Power Boiler in supplemental steam production. As discussed, annual emission rates from the Power Boiler during backup steam production will be less than or equal to the combined associated decrease in annual emission rates of the CFB Boiler and the Recovery Furnace resulting from the experienced downtime.

SECTION VII. BEST AVAILABLE CONTROL TECHNOLOGY

Any major stationary source or major modification subject to federal PSD review must conduct an analysis to ensure the implementation of BACT. The requirement to conduct a BACT analysis can be found in the Clean Air Act itself, in the federal regulations implementing the PSD program, in the regulations governing federal approval of state PSD programs, and in Oklahoma regulations. The State of Oklahoma defines BACT in OAC 252:100-8-1.1, as follows:

"...the control technology to be applied for a major source or modification is the best that is available as determined by the Director on a case-by-case basis taking into account energy, environmental, and economic impacts and other costs of alternate control systems."

Although BACT is determined by evaluating control technologies to determine which are technically and economically feasible, BACT is an emission limit, not the use of a specific technology. A BACT analysis is required to assess the appropriate level of control for each new or physically modified emissions unit for each pollutant that exceeds an applicable PSD SER. As discussed in Section VI , the proposed project requires a BACT analysis for VOC and SAM.

BACT APPLICABILITY BY POLLUTANT AND EMISSIONS UNIT

Unit Description	VOC	SAM
CFB Boiler	Yes	Yes
Lime Kiln	Yes	Yes
Chemical Recovery Furnace	Yes	Yes
Paper Machine	Yes	No
OCC Plants	Yes	No

In a memorandum dated December 1, 1987, U.S. EPA stated its preference for a “top-down” analysis (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987). After determining whether any NSPS is applicable, the first step in this approach is to determine for the emissions unit in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for the unit in question, the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic concerns. The five basic steps of a top-down BACT review procedure as identified by U.S. EPA in the March 15, 1990, Draft BACT Guidelines are as follows (U.S. EPA, Draft BACT Guidelines. (Research Triangle Park, NC). March 15, 1990):

Step 1. Identify all control technologies
Step 2. Eliminate technically infeasible options
Step 3. Rank remaining control technologies by control effectiveness
Step 4. Evaluate most effective controls and document results
Step 5. Select BACT

U.S. EPA has consistently interpreted statutory and regulatory BACT definitions as containing two core requirements that the agency believes must be met by any BACT determination, regardless of whether it is conducted in a “top-down” manner. First, the BACT analysis must include consideration of the most stringent available control technologies (i.e., those which provide the “maximum degree of emissions reduction”). Second, any decision to require a lesser degree of emissions reduction must be justified by an objective analysis of “energy, environmental, and economic impacts (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987).

Potentially applicable emission control technologies were identified by researching the U.S. EPA control technology database, technical literature, and control equipment vendor information and by using process knowledge and engineering experience. The Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC), a database made available to the public through the U.S. EPA’s Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN), lists technologies that have been approved in PSD permits as BACT for numerous types of process units.

CFB Boiler BACT Analysis

SUMMARY OF ANTICIPATED MAJOR CFB BOILER DESIGN PARAMETERS

Parameter	Value	Notes
Heat Input	(TSI)	
Steam Output	(TSI)	2,350 psig, 1,000°F superheat
Primary Fuel	Coal	Also will burn a variety of other fuels

Pollutant Formation Processes

SAM is formed in the boiler's combustion chamber by the oxidation of SO_2 to SO_3 and its subsequent reaction with water; less than 3% of the SO_2 is oxidized to SO_3. In the boiler stack, all of the SO_3 formed is expected to convert to sulfuric acid mist. SO_2 and SO_3 form as the organic and pyritic sulfurs in the coal are oxidized in the combustion process.

Emissions of VOC result from incomplete combustion of fuel from either insufficient residence time at a sufficiently high temperature or insufficient oxygen levels to complete the final step in the oxidation of fuel.

CFB Boiler Control Technology Evaluations

The table below shows the control technologies identified as being commercially available for control of the listed pollutants from a CFB Boiler. The potential control technologies listed were evaluated for each pollutant, based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant were considered in order of decreasing emissions reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE CFB BOILER

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)*
SAM	Dry Scrubbing in CFB Bed	90-95
	Wet Scrubber	80-95
	Spray Dryer Absorber	60-90
	Low Sulfur Coal	Base Case
VOC	Catalytic Oxidation	60-80
	GCP in a CFB Boiler	Base Case

*Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2, NCASI Special Report 03-04, and vendor data.

<u>Sulfuric Acid Mist</u>

SAM is formed by the hydration of SO_2 in free (i.e., liquid phase) water. Therefore, in order to control emissions of SAM, emissions of SO_2 must be controlled. The remainder of this analysis focuses on controlling emissions of SO_2.

Because of the acidic nature of SO_2, existing sulfur dioxide control technology is primarily based on alkaline scrubbing systems. Scrubbers remove SO_2 formed during combustion by using various alkaline agents to absorb SO_2 in the flue gas. Flue gases can be treated using wet, dry, or semi-dry desulfurization agents that are either disposable (byproducts are discarded or sold) or regenerable (absorbent is regenerated and reused).

Dry Scrubbing in CFB Boiler Bed
CFB boilers frequently use a dry scrubbing technique by adding finely ground limestone to the fluidized bed. The mechanism for this is nearly identical to a spray dryer. In the CFB Boiler, limestone is calcined into lime (CaO) by driving off CO_2. The lime then reacts with SO_2 to form calcium sulfate, a solid ($CaSO_4$). The calcium sulfate particles are removed from the boiler media recirculation system by the particulate control system. The CFB Boiler dry scrubbing mechanism results in SO_2 reductions of approximately 90 to 95% (F. Belin *et. al*, "Babcock & Wilcox CFB Boilers—Design and Experience", Presented to the 16th International Conference on FBC, May 2001, Reno, NV). Removal efficiencies of up to 98% are possible under certain conditions, but are not achievable with all coals.

Wet Scrubber
Lime/limestone, sodium hydroxide, and dual alkali scrubbers are among the commercially proven wet flue gas desulfurization (WFGD or "wet scrubber") technologies. The lime/limestone processes uses a slurry of calcium oxide or limestone to absorb SO_2 from the flue gas. Sodium hydroxide systems use a caustic solution, while dual alkali systems use a combination of limestone and caustic solution. Control efficiencies up to 95% can be sustained over extended periods. However, the efficiency of the wet scrubber will be dependent on many factors, including the SO_2 inlet concentration; lower inlet concentrations yield lower control efficiencies. In the case of the CFB Boiler, a wet scrubber is expected to offer approximately 50% control because of the low SO_2 inlet concentrations (because of the inherent SO_2 control in the CFB Boiler).

A simplistic economic analysis was performed to determine the cost effectiveness of a wet scrubber on the CFB Boiler. Cost information was obtained from recent U.S. EPA fact sheets used to calculate costs for controlling SO_2 (U.S. EPA, "Air Pollution Control Technology Fact Sheet; Flue Gas Desulfurization", EPA-452/F-03-034, p. 2). The SO_2 control efficiencies were assumed to be the same as SAM efficiencies and were applied to the uncontrolled SAM emission rates. Since the U.S. EPA data give a range of costs, low, medium, and high cost values were chosen. This information is shown in table on the following page. As the table shows, the use of a wet scrubber is not economically feasible, even when burning higher (up to 4%) sulfur coal.

U.S. EPA COST DATA FOR WET SCRUBBERS ON SMALL BOILERS (<2,000 MMBTU/HR)

	Cost Range		
Parameter	**Low**	**Medium**	**High**
Capital Cost, $/MMBtu	$25,000	$75,000	$150,000
O&M Cost, $/MMBtu-yr	$800	$1,200	$1,800
Annualized Capital Cost, $/yr	$7,095,000	$21,285,000	$42,570,000
O&M Cost, $/yr	$1,513,600	$2,270,400	$3,405,600
Total Annual Cost, $/yr	$8,608,600	$23,555,400	$45,975,600
Cost Effectiveness, $/ton SAM, 4% Sulfur Coal	$989,346	$2,707,110	$5,283,757

Spray Dryer Absorber
A spray dryer absorber system utilizes alkaline agent slurry in conjunction with a particulate collection system, such as a baghouse, fabric filter, or ESP. Similar to a WFGD system, the flue gas stream is contacted with an alkaline slurry spray after leaving the boiler combustion chamber. Unlike a WFGD, which relies on flue gas contact with the slurry as the primary method of pollutant removal, this stage represents the first of two removal steps for a spray dryer absorber. Once the slurry spray is introduced into the flue gas stream, the alkali droplets are allowed to react with the SO_2 contaminants before drying into a fine powder. This fine powder is then carried over into the particulate collection system and removed. This collector serves as the second stage of the removal system and provides additional contact between the dried reactants and SO_2 contaminants.

The combination of spray system and particulate removal is able to achieve SO_2 removal efficiencies of 60 to 90% when implemented aggressively. However, the efficiency of the spray dryer system will be dependent on many factors, including the SO_2 inlet concentration; lower inlet concentrations yield lower control efficiencies. In the case of the CFB Boiler, a spray dryer is expected to offer approximately 50% control (the 50% control was provided by CFB boiler vendor) because of the low SO_2 inlet concentrations (because of the inherent SO_2 control in the CFB Boiler).

A simplistic economic analysis was performed to determine the cost effectiveness of a spray dryer absorber on the CFB Boiler. Cost information was obtained from recent U.S. EPA data used to calculate costs for controlling SO_2 (U.S. EPA, "Air Pollution Control Technology Fact Sheet; Flue Gas Desulfurization", EPA-452/F-03-034, p. 2). The SO_2 control efficiencies were assumed to be the same as SAM efficiencies and were applied to the uncontrolled SAM emission rates. Since the U.S. EPA data give a range of costs, low, medium, and high cost values were chosen. This information is shown following page. As the table shows, the use of a spray dryer is not economically feasible, even when burning higher (up to 4%) sulfur coal.

U.S. EPA COST DATA FOR SPRAY DRYERS ON SMALL BOILERS (<2,000 MMBTU/HR)

	Cost Range		
Parameter	**Low**	**Medium**	**High**
Capital Cost, \$/MMBtu	\$30,000	\$75,000	\$150,000
O&M Cost, \$/MMBtu-yr	\$1,000	\$5,000	\$30,000
Annualized Capital Cost, \$/yr	\$4,257,000	\$7,095,000	\$11,352,000
O&M Cost, \$/yr	\$1,892,000	\$2,838,000	\$5,676,000
Total Annual Cost, \$/yr	\$6,149,000	\$9,933,000	\$17,028,000
Cost Effectiveness, \$/ton SAM, 4% Sulfur Coal	\$706,675	\$1,141,553	\$1,956,947

Low Sulfur Coal Usage

Sulfur dioxide emissions are directly related to the sulfur content of the coal fuel fired in the boiler. As a result, the use of lower sulfur coal can have a dramatic effect on SO_2 emissions. A survey of commercially-available coal types indicates a variation of sulfur content from 0.25 weight percent (wt%) for some anthracite coals to as high as 5.4 wt% for certain bituminous varieties.

While the use of low-sulfur coal is attractive from the perspective of minimizing emissions, Weyerhaeuser anticipates using coal mined in Oklahoma for a portion of the coal fired in the CFB Boiler. Low-sulfur coal is not available from mines in Oklahoma and surrounding states and must be imported from Wyoming or its neighboring states, resulting in additional cost and transportation-related emissions.

SAM BACT Determination

As mentioned above, the operation of a CFB boiler results in inherently low SO_2 and SAM emissions. The economic analyses for a wet scrubber and a spray dryer presented above indicate that the additional installation of these devices is not economical. Therefore, the use of a CFB boiler is determined as BACT for SAM. An appropriate BACT limit for SAM is 0.0012 lb/MMBtu averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT analyses listed in the RBLC database. To account for short-term spikes in SAM emission rates from the CFB Boiler, Weyerhaeuser also anticipates a short-term SAM limit of 0.0021 lb/MMBtu averaged on a daily basis.

<u>Volatile Organic Compounds</u>

The control technologies reviewed for VOC emissions were catalytic oxidation and good combustion practices.

Catalytic Oxidation

The mechanism of catalytic oxidation is where combustion products are passed over a catalyst at temperatures between 400 and 800°F. However, oxidation catalysts are readily poisoned by even moderate concentrations of SO_2, such as those in the boiler. Therefore, the use of an oxidation catalyst on a CFB boiler is not feasible. In addition, no entries of a CFB boiler using catalytic oxidation were found in the RBLC database.

Good Combustion Practices
Good combustion practices involve parametric monitoring and controlling the operating parameters of the boiler to ensure continual operation as close to optimum conditions as possible. VOC emissions are minimized when the boiler temperature and excess oxygen availability are adequate for complete combustion. This is ensured by the use of stack oxygen sensors, the long residence time of the combustion products in the boiler and routine tuning of the burners.

VOC BACT Determination
The use of catalytic oxidation on a CFB boiler is not technically feasible. Therefore, the best feasible control option for VOC from the boiler is the use of GCP. An appropriate BACT limit for VOC (as carbon) from the boiler is 0.005 lb/MMBtu averaged on a Weyerhaeuser fiscal month basis, which is consistent with data from multiple CFB boiler vendors.

Summary

BACT SUMMARY FOR THE CFB BOILER

Pollutant	Emission Limit	Control Technology
SAM	0.0012 lb/MMBtu (Weyerhaeuser fiscal month average) 0.0021 lb/MMBtu (Weyerhaeuser daily average)	CFB Boiler with Limestone Injection
VOC (as carbon)	0.005 lb/MMBtu (Weyerhaeuser fiscal month average)	GCP

Lime Kiln BACT Analysis

SUMMARY OF ANTICIPATED MAJOR LIME KILN DESIGN PARAMETERS

Parameter	Value
Heat Input	**(TSI)**
Primary Fuel	Petcoke/Natural Gas
Average Petcoke Sulfur Content	5%

Lime Kiln Control Technology Evaluations
The Lime Kiln will burn a mixture of natural gas and petcoke. The potential control technologies listed in table below were evaluated for each pollutant, based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant are considered in order of decreasing emission reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE LIME KILN

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)*
SAM	Lime Kiln Scrubbing	75-98
	Wet Scrubber	80-95
	Spray Dryer Absorber	60-90
	Low Sulfur Fuel	Base Case
VOC	Catalytic Oxidation	60-80
	GCP	Base Case

*Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

<u>Sulfuric Acid Mist</u>
The formation of SAM in the Lime Kiln is the same as in other combustion devices; SO_2 is oxidized to SO_3 and hydrated to form H_2SO_4. The removal mechanisms for SAM are the same as for SO_2, with each control technology providing similar efficiencies for both SO_2 and SAM. Therefore, the remainder of this analysis is focused on SO_2 control technologies.

Lime Kiln Scrubbing
The ability of lime and/or limestone to scrub SO_2 from the exhaust gas. Since the Lime Kiln contains a large quantity of lime, significant amounts of SO_2 are scrubbed from the exhaust stream. The effectiveness of the SO_2 removal is estimated at up to 98% (NCASI, "Technical Bulletin 646, Emission Factors for NO_x, SO_2 and VOC from Boilers, Kraft Pulp Mills and Bleach Plants", 1993 and private communications with Robert Crawford, NCASI, containing draft updates to emissions data in NCASI Technical Bulletin 646).

Wet Scrubber
Wet scrubbing was discussed previously. Control efficiencies up to 95% can be sustained over extended periods.

Spray Dryer Absorber
Spray drying was discussed previously. The combination of a spray system and particulate removal is able to achieve SO_2 removal efficiencies of 60 to 90% when implemented aggressively.

Low Sulfur Fuel Usage
In boilers and other units that do not contain lime as part of the process, sulfur dioxide emissions are directly related to the sulfur content of the fuel fired. As a result, the use of lower sulfur fuel can have a dramatic effect on SO_2 emissions. However, the presence of lime in the Lime Kiln means that SO_2 emissions are relatively insensitive to fuel sulfur content. Therefore, the use of low sulfur fuel is likely to have minimal effect on SO_2 emissions.

SAM BACT Determination
As mentioned above, a lime kiln inherently incorporates aspects of the wet scrubbing and spray dryer systems in its operation. As a result, the inherent scrubbing present in the Lime Kiln is determined as BACT for SAM. This is equivalent to 0.002 lb/MMBtu for SAM averaged on a

Weyerhaeuser fiscal month basis. To account for short-term spikes in SAM emission rates from the Lime Kiln, Weyerhaeuser also anticipates a short-term SAM limit of 0.0089 lb/MMBtu averaged on a daily basis.

Volatile Organic Compounds

The control technologies reviewed for VOC emissions were catalytic oxidation and good combustion practices.

Catalytic Oxidation
The mechanism of catalytic oxidation was discussed previously. Oxidation catalysts are readily poisoned by even moderate concentrations of SO_2, such as those exiting the Lime Kiln. In addition, catalytic oxidation has not been successfully demonstrated in practice on a lime kiln. Weyerhaeuser concludes that the use of catalytic oxidation on the Lime Kiln is not technically feasible.

Good Combustion Practice
Good combustion practices involve parametric monitoring and controlling the operating parameters of the Lime Kiln to ensure continual operation as close to optimum conditions as possible. VOC emissions are minimized when the kiln temperature and excess oxygen availability are adequate for complete combustion. This is ensured by the use of oxygen sensors and routine tuning of the kiln burners.

VOC BACT Determination
The use of catalytic oxidation on a lime kiln is not technically feasible. Therefore, the best feasible control option for VOC from the kiln is the use of good combustion practices, appropriate BACT limit for VOC (as carbon) from the Lime Kiln is 0.26 lb/ton CaO**,** averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database (Recent BACT entries listed in the RBLC include levels of 0.073 lb/ton CaO, 0.234 lb/ton CaO, 0.69 lb/ton CaO, and 1 lb/ton CaO. The lowest level in the list is for the Apple Grove, WV, facility that was never built. Therefore, the proposed BACT limit is at the low end of the remaining BACT entries in the RBLC).

Summary

BACT SUMMARY FOR THE LIME KILN

Pollutant	**Emission Limit**	**Control Technology**
SAM	0.002 lb/MMBtu (Weyerhaeuser fiscal month average) 0.0089 lb/MMBtu (daily average)	Lime Kiln (Inherent Scrubbing)
VOC (as carbon)	0.26 lb/ton CaO (Weyerhaeuser fiscal month average)	GCP

Pollutant Formation Processes

The formation of SO_2 and SAM in the Recovery Furnace is somewhat different from the CFB Boiler. In addition to sulfur contained in the fuel combusted by the Recovery Furnace (including black liquor solids), sulfur is contained in the non-condensable gases that are fed to the Recovery Furnace for emission control. The Recovery Furnace also differs from other combustion sources, as the Recovery Furnace contains a reducing zone in the bottom of the furnace, below the primary burners. The formation of VOC in the Recovery Furnace is the same as in the CFB Boiler.

Chemical Recovery Furnace Control Technology Evaluations

Table below lists the control technologies identified as being commercially available for control of the listed pollutants from a Recovery Furnace. The potential control technologies were evaluated for each pollutant based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant were considered in order of decreasing emission reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE RECOVERY FURNACE

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
SAM	Wet Scrubber	80-95
	Spray Dryer Absorber	70-90
	High Solids Firing	0.5 ppm
	Low Sulfur Fuels	30-70
	GCP	Base Case
VOC	Catalytic Oxidation	60-80
	Staged Combustion	40-60
	Non-Direct Contact Evaporators	Varies
	GCP	Base Case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

<u>Sulfuric Acid Mist</u>
In order to control emissions of SAM, emissions of SO_2 must be controlled. Therefore, the remainder of this analysis focuses on controlling emissions of SO_2.

Wet Scrubber
A review of U.S. EPA and state BACT analyses indicates that the use of wet scrubbers has not been successfully demonstrated on a commercial Recovery Furnace. Weyerhaeuser concludes that the use of a wet scrubber on the Recovery Furnace is not technically feasible.

Spray Dryer Absorber
A review of U.S. EPA and state BACT analyses indicates that the use of spray dryers has not been successfully demonstrated on a commercial Recovery Furnace. Weyerhaeuser concludes that the use of a spray dryer on the Recovery Furnace is not technically feasible.

High Solids Firing
The high solids firing technique involves firing black liquor with a high solids content in the Recovery Furnace. The solids content of the black liquor is increased to over 65% before it is fed to the Recovery Furnace. This results in the evaporation of less water from the solids, increasing the furnace bed temperature. The higher bed temperature improves reduction of sulfur in the Recovery Furnace and, thus, lowers SO_2 emissions.

Low Sulfur Fuels
The majority of the fuel burned in the Recovery Furnace is black liquor solids. Since this is how the Recovery Furnace serves its purpose in the Kraft pulping cycle, this cannot be changed. Therefore, the use of low sulfur fuels is not a technically feasible option for the Recovery Furnace.

Good Combustion Practices and Furnace Design
GCP is the base case control for SAM on a Recovery Furnace and incorporates no additional controls. The chemical recovery furnace (CRF) operates with three combustion zone. The concentrated black liquor is introduced into the middle zone of the furnace where water and volatile organics are evaporated from the liquor as it falls to the bottom. The bottom of the furnace is operated with reduced oxygen where the black liquor solids are pyrolyzed. Volatilized organic material rises up the furnace and molten organic salts (including NaS) are removed from the bottom of the furnace. The top of the furnace is operated as an oxidizing zone, where the combustion of organics is completed. The new CRF will have better capture of sulfur (lower SO_2 emissions) due to improved furnace design and higher black liquor solids firing. Higher black liquor solids entering the furnace produces increased bed temperatures in the bottom of the furnace and thus more sodium fume production. SO_2 capture in the CRF is understood to be facilitated by sodium fume reacting with the sulfur compounds to form sulfate that is collected as particulate. The overall sulfur capture rate of the new furnace will be over 99%.

SAM BACT Determination
High solids firing is the highest performing control option that has been demonstrated in practice and is selected as the control technology for SAM from the Recovery Furnace. The appropriate BACT limit for SAM from the Recovery Furnace is 0.5 ppm (corrected to 8% oxygen) averaged on a Weyerhaeuser fiscal month basis.

<u>Volatile Organic Compounds</u>

The control technologies reviewed for VOC emissions were catalytic oxidation, staged combustion, non-direct contact evaporator (NDCE) design, and good combustion practices.

Catalytic Oxidation
Catalytic oxidation was discussed previously in Section. Catalytic oxidation has not been successfully demonstrated in practice on a Recovery Furnace. Weyerhaeuser concludes that the use of catalytic oxidation on the Recovery Furnace is not technically feasible.

Staged Combustion
Staged combustion is frequently incorporated into new Recovery Furnace designs to enhance capacity and control over the combustion process. Staged combustion can achieve VOC outlet concentrations of 40 ppm (corrected to 8% oxygen) when combined with the use of a NDCE design.

Non-Direct Contact Evaporator Design
The use of a NDCE design for the black liquor evaporation section of the Recovery Furnace is a technically feasible control technology and is frequently applied to modified and new Recovery Furnaces. Recent BACT analyses indicate that the use of the NDCE design, in conjunction with staged combustion, can result in VOC emissions of 40 ppm (corrected to 8% oxygen).

Good Combustion Practice
GCP is the base case control for VOC on a Recovery Furnace and incorporates no additional controls.

VOC BACT Determination
The use of staged combustion and the NDCE design is the highest performing control option that has been demonstrated in practice and is selected as the control technology for VOC from the Recovery Furnace. The appropriate BACT limit for VOC (as carbon) from the Recovery Furnace is 40 ppm (corrected to 8% oxygen) averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database.

Summary

BACT SUMMARY FOR THE RECOVERY FURNACE

Pollutant	Emission Limit	Control Technology
SAM	0.5 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP
VOC (as carbon)	40 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	Staged Combustion / NDCE

Paper Machines BACT Analysis

Pollutant Formation Processes

VOC is the only pollutant emitted by the paper machines subject to PSD review for this project. Emissions of VOC from the paper machines are attributed to paper machine additives and recycled process water. VOC are present in the water portion of the pulp stock that is fed to the paper machines. This VOC is volatilized during the drying process.

Various additives, including but not limited to, starch, alum, caustic, sulfuric acid, defoamer, felt cleaner, retention and drainage aids, and strength and size additives, may be added to the pulp slurry upstream of the paper machines to improve the final product quality and to maximize raw material utilization. VOC generated by these additives cannot be reasonably controlled, nor can substitute additives always be employed. Therefore, the BACT for VOC does not address control technologies relative to the use of different additives.

Paper Machine Control Technology Evaluations

The table below, lists the potentially feasible control technologies for VOC emissions from the paper machines.

POTENTIAL CONTROL TECHNOLOGIES FOR THE PAPER MACHINES

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
VOC	Thermal Oxidation	95+
	Catalytic Oxidation	95+
	Carbon Adsorption	95
	Biofiltration	60-90
	Wet Scrubber	Varies
	Good Operating Practices	Base Case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

Thermal Oxidation

Thermal oxidation involves heat recovery with regenerative beds or recuperative heat exchanges by further combusting VOC-laden gases. Although no installations of thermal oxidizers for the control of paper machine exhausts have been required, this control option is considered technically feasible. Thermal oxidizers can achieve a VOC destruction efficiency of approximately 95%.

However, the volumetric flow rates of the paper machines are significantly large, and the VOC concentrations are very low, such that the installation and operation of a thermal oxidizer is economically infeasible. U.S. EPA has estimated annualized costs for regenerative thermal oxidizers at between $8 and $33 per scfm (U.S. EPA, “Air Pollution Control Technology Fact Sheet; Regenerative Incinerator”, EPA-452/F-03-021, p. 3.). This would yield “an order of magnitude” annualized cost of greater than $20,500,000 (using $20.5/scfm, the middle of the range). Since the uncontrolled amount of VOC emitted by the paper machines is approximately 830 ton/yr, and the thermal oxidizer can control approximately 95% of all VOC, the annualized cost effectiveness is greater than $26,000 per ton of VOC removed. In addition to the cost, a thermal oxidizer of this size would emit between 309 and 926 ton/yr NO_x. VOC from paper machines are also difficult to capture, because of the large size of the paper machines and the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Weyerhaeuser concludes that the use of thermal oxidation on paper machines is not economically feasible and has adverse environmental impacts, based on the additional generation of NO_x emissions.

Catalytic Oxidation

Catalytic oxidation is similar to thermal oxidation for control of VOC emissions from paper machines and can achieve similar control efficiency. However, catalytic oxidation uses catalysts to lower the required energy levels, such that oxidation can be accomplished at a lower temperature. As a result, the necessity for auxiliary fuel will be lower than a thermal oxidizer. Although no installations of catalytic oxidizers for the control of paper machine exhausts have been required, this control option is considered technically feasible. Based on the characteristics of the paper machine exhaust streams, there are no specific issues suggesting that a catalytic oxidizer is not technically feasible.

The capital cost of a catalytic oxidizer is typically higher than the capital cost of a thermal oxidizer. Based on the conservative (i.e., less than actual cost) cost evaluation for a thermal oxidizer, the cost effectiveness of catalytic oxidation is at least $26,000 per ton of VOC removed. In addition, since catalytic oxidation systems are very sensitive to particulates (especially wood fiber), some form of additional particulate control to address emissions during a process upset would be required to ensure reliable operation, further increasing the capital costs. Thus, catalytic oxidation is considered economically infeasible.

Carbon Adsorption

Carbon adsorption is a VOC control technique that uses activated carbon as an adsorbent. VOC has a strong affinity for the surface of activated carbon; this affinity is higher as the temperature of the gas stream is reduced.

In the carbon adsorption process, VOC-laden gases are passed through a bed of activated carbon. The VOC adsorbs onto the surface of the carbon until the amount of VOC adsorbed on the carbon is in equilibrium with the VOC concentration in the gas stream. Prior to reaching equilibrium, the VOC on the carbon is stripped off using steam or hot air and then condensed. Carbon adsorption can achieve VOC control efficiencies of approximately 95%; however, the efficiency of carbon adsorption is highly dependent on the VOC being adsorbed, the concentration of the VOC, and the conditions of the gas stream.

Carbon adsorption is most efficient when VOC inlet concentrations are between 100 and 5,000 ppm, and the gas stream is cool and at moderate or low relative humidity. The gas stream from the paper machines is at or near saturation with water vapor at a temperature of approximately 165 °F. In addition, the VOC concentration in the paper machine exhaust is lower than the optimum carbon adsorption operating range. Therefore, the performance of the carbon adsorber under these conditions will be very poor.

The primary VOC emitted by paper machines is methanol. Carbon adsorption is a poor choice for controlling methanol because of the poor adsorption isotherm for methanol. Carbon and zeolite can be used in series to improve the control efficiency, but overall control is still poor (Frank Hussey and Ajay Gupta, , "Using Carbon and Zeolite For VOC Removal," from ESD-The Engineering Society, Proceedings of the Advanced Coatings Technology Conference, April 7-10, 1997, Detroit, MI). The combination of all of these factors make it unlikely that carbon adsorption will produce any significant VOC reductions on the paper machines without chilling the entire inlet stream, which is likely to be extremely expensive. VOC from paper machines are also difficult to capture, because of the large size of the paper machines and the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Additionally, a review of U.S. EPA and state BACT analyses indicates that the use of carbon absorbers has not been successfully demonstrated on paper machines. Additionally, spent carbon from the adsorber must be regenerated either at an on-site regeneration facility or by an off-site activated carbon supplier. Weyerhaeuser concludes that the use of carbon adsorption on paper machines is not technically feasible.

Biofiltration

Biofiltration is the use of bacteria and other microbes to remove VOC from a gas stream. Biofiltration is a relatively new technology where VOC-laden gas is pushed through a bed containing a fixed media with microorganisms attached to the media. The organisms consume the VOC as part of their metabolism, creating CO_2 and organism mass.

Since biofiltration is a biological – not physical – technology, it is highly sensitive to process conditions. Biofilters work best with saturated gas streams at approximately 90 to 100 °F, with a consistent flowrate and organic concentration. Since the gas stream from the paper machines is approximately 165 °F, the gas stream would have to be cooled before being fed to the biofilter, which would release a relatively large amount of heat energy and result in the generation of a large amount of water. Additionally, based on the large exhaust gas flow rates from the paper machines, a substantial amount of space would be needed to locate a biofilter.

As mentioned previously, the engineering problems associated with cooling the paper machine exhaust stream to an acceptable temperature for the biofilter are significant. Biofiltration is an unproven technology with regard to applications for the exhaust from paper machines, and no installations in paper machines are known. Weyerhaeuser concludes that the use of biofiltration on the paper machines is not technically feasible.

Wet Scrubber
Wet scrubbing involves the use of a packed tower, spray tower, or venturi to remove water-soluble VOC from the gas stream by contacting the gas stream with water droplets. The VOC-laden water is then treated to remove the VOC and returned to the scrubber.

Methanol is a primary VOC compound in the exhaust from the No. 2 and No. 3 Paper Machines. Conventional packed wet scrubbers recirculate a large flow of the scrubbing liquid. According to a scrubber vendor (Sly Incorporated), such a scrubbing system is ineffective to control methanol, based on its high Henry’s law constant. A once-through water scrubber can achieve reasonable methanol control efficiency. However, performance of a once-through scrubber with respect to control of pinenes and terpenes, which are also important VOC constituents in paper machine exhausts, are unknown, and this type of scrubber is expected to be ineffective for these compounds based on their chemical properties. There are many other types of VOC in the stream that also need to be controlled. Designing a scrubbing system and formulating a scrubbing reagent for all of these VOC are infeasible. Therefore, the wet scrubber control option is considered to be technically infeasible and will not be considered further in this analysis.

VOC BACT Determination
There are no technically and/or economically feasible control technologies for controlling VOC from the paper machines. Several technically feasible options are economically infeasible, primarily based on the high exhaust gas flow and the low pollutant loadings. Therefore, good operating practices are determined as BACT for the paper machines.

<u>OCC Plant BACT Analysis</u>

Pollutant Formation Process

VOC is the only pollutant emitted by the OCC Plants that is subject to PSD review for this project. The OCC Plants take in used containers, re-pulp them, and separate foreign particles from the pulp. This pulp is then used in the paper machines to produce new product. VOC emissions from the OCC Plants are released from fugitive emission sources.

OCC Plant Control Technology Evaluations

Because no control technology information is available in the RBLC database for VOC emissions from OCC plants, a set of potential control technologies are identified, based on commonly available VOC control technologies. Table below, lists the potential technically feasible control technologies for controlling VOC from the OCC Plants. These control technologies were described in the previous section and will not be discussed here.

POTENTIAL CONTROL TECHNOLOGIES FOR OCC PLANTS

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
VOC	Thermal Oxidation	95+
	Catalytic Oxidation	95+
	Carbon Adsorption	95+
	Biofiltration	60-90
	Wet Scrubber	Varies
	Good Operating Practices	Base case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

Thermal Oxidation

The mechanism of thermal oxidation of VOC in the OCC Plants is the same as for the paper machines. Although no installations of thermal oxidizers for the control of OCC plant exhausts have been required, this control option is considered technically feasible.

However, the volumetric flow rates of the OCC Plants are significantly large, and the VOC concentrations are very low, such that the installation and operation of a thermal oxidizer is economically infeasible. U.S. EPA has estimated annualized costs for regenerative thermal oxidizers at between $8 and $33 per scfm (U.S. EPA, "Air Pollution Control Technology Fact Sheet; Regenerative Incinerator", EPA-452/F-03-021, p. 3). This would yield "an order of magnitude" annualized cost of greater than $8,200,000 (using $20.5/scfm, the middle of the range). Since the uncontrolled amount of VOC emitted by the OCC Plants is approximately 37 ton/yr, and the thermal oxidizer can control approximately 95% of all VOC, the annualized cost effectiveness is greater than $220,000 per ton of VOC removed. In addition to the cost, a thermal oxidizer of this size would emit between approximately 123 and 370 ton/yr NO_x. VOC from OCC plants are also difficult to capture, because of the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Weyerhaeuser concludes that the use of thermal oxidation on OCC plants is not economically feasible and has adverse environmental impacts, based on the additional generation of NO_x emissions.

Catalytic Oxidation

The mechanism of catalytic oxidation of VOC in the OCC Plants is the same as for the paper machines. Although no installations of catalytic oxidizers for the control of OCC plant exhausts have been required, this control option is considered technically feasible. However, the capital cost of a catalytic oxidizer is typically higher than the capital cost of a thermal oxidizer. Based on the conservative (i.e., less than actual cost) cost evaluation for a thermal oxidizer, the cost effectiveness of catalytic oxidation is at least $220,000 per ton of VOC removed. In addition, since catalytic oxidation systems are very sensitive to particulates (especially wood fiber), some form of additional particulate control to address emissions during a process upset would be required to ensure reliable operation, further increasing the capital costs. Thus, catalytic oxidation is considered economically infeasible.

Carbon Adsorption
Carbon adsorption was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of carbon adsorption of VOC in the OCC Plants is the same as for the paper machines. Therefore, carbon adsorption is also not technically feasible for the OCC Plants.

Biofiltration
Biofiltration was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of biofiltration of VOC in the OCC Plants is the same as for the paper machines. Therefore, biofiltration is also not technically feasible for the OCC Plants.

Wet Scrubber
Wet scrubbing was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of wet scrubbing of VOC in the OCC Plants is the same as for the paper machines. Therefore, wet scrubbing is also not technically feasible for the OCC Plants.

VOC BACT Determination
There are no technically and/or economically feasible control technologies for controlling VOC from the OCC Plants. Several technically feasible options are economically infeasible, primarily based on the high exhaust gas flow and the low pollutant loadings. Therefore, good operating practices are determined as BACT for the OCC Plants.

SECTION VIII. AIR QUALITY IMPACTS

For any pollutant exceeding its PSD SER as part of a new construction or modification, a PSD air impacts analysis is required to demonstrate compliance with any applicable ambient air quality standards established for that pollutant. As identified in Section VI of this permit application, the creditable emissions increases from the proposed project exceed the PSD SER for VOC and SAM. Therefore, an ambient impacts review for VOC is conducted using the Scheffe Method. A PSD air quality analysis is not conducted for SAM, since no NAAQS or PSD Increments for this pollutant have been established. However, compliance with the state toxics standard (OAC 252:100-41) for sulfuric acid mist was conducted and is in compliance.

U.S. EPA regulates VOC as precursors to tropospheric ozone formation. Ozone is unique because U.S. EPA has not established a PSD modeling significance level (an ambient concentration expressed in either micrograms per cubic meter [$\mu g/m^3$] or parts per million by volume [ppm_v]) for ozone. U.S. EPA has established an ambient monitoring *de minimis* level, which is different from other criteria pollutants, because it is based on a mass emission rate (100 tpy) instead of an ambient concentration (in units of $\mu g/m^3$ or ppm_v). In addition, U.S. EPA has established primary and second NAAQS for ozone. Since the proposed project net VOC emissions exceed the applicable PSD SER, the Scheffe Method is employed to determine whether the proposed project will cause or contribute to a violation of the currently enforced 1-hour ozone NAAQS (Scheffe, Richard D., *VOC/NOx Point Source Screening Tables*, U.S. EPA OAQPS Technical Support Division, Draft Document, September 1988).

The Scheffe Method is a screening procedure used to calculate the ambient ozone concentration resulting from a source. A series of lookup tables, based on the Reactive Plume Model-II, are used to conservatively estimate the ozone concentration increase. Use of the Scheffe Method requires knowledge of the ratio of maximum annual non-methane volatile organic compounds (NMVOC) to NO_x emissions from the facility. The lookup tables have been validated for NMVOC/NO_x values ranging from 1 to 30. The user is cautioned against interpolating from the tables for values outside this range. In addition, it is generally accepted that NMVOC/NO_x ratios less than 2:1 result in no significant increase in ozone (Texas Commission on Environmental Quality (formerly Texas Natural Resource Conservation Commission), *Air Quality Modeling Guidelines*, Draft Document, February 1999).

The post-project facility-wide VOC/NO_x ratio is 1.17:1. Since the post-project facility-wide VOC emissions total includes methane emissions, it follows that the NMVOC/NO_x ratio will be less than 1.17:1. As the NMVOC/NO_x ratio is less than 2:1, the Valliant Mill is considered NO_x-dominated, and the NMVOC/NO_x ratio is not conducive to ozone formation, and no significant increase in ozone can be expected.

SECTION IX. Additional Impacts Analysis

The PSD additional impacts analysis depends on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area. The analysis is presented in four parts:

- Growth analysis
- Soils and vegetation analysis
- Visibility impairment analysis
- Class I Area impact analysis

<u>Growth Analysis</u>

The elements of the growth analysis include a projection of the associated industrial, commercial, and residential growth that will occur in the area of impact attributable to the source, including the potential impact on ambient air resulting from this growth. The Valliant Mill is an existing facility, and therefore is not expected to cause a significant shift of population or an increase in industrial, commercial, and residential growth in the area. Since no significant associated commercial, industrial, or residential growth is expected as a result of the project, negligible growth-related ambient air impacts are expected.

<u>Soil and Vegetation Analysis</u>

A soil and vegetation analysis examines the characteristics of soils and vegetation in the impact area and determines if the air emissions from proposed project will create significant harmful effects. The secondary NAAQS are intended to protect the public welfare from adverse effects of airborne pollutants. This protection extends to agricultural soil and vegetation.

McCurtain County has an area of 1,825 square miles. According to the Soil Conservation Service, most of the soils are fine sandy loams with a pH in the acidic range (4.5 to 6.5). The vegetation is primarily forest and pasture. The Oklahoma Department of Agriculture reported that less than 6% of the county land area is cropland. The surrounding counties in Oklahoma, Texas, and Arkansas have similar conditions, but the proportion of cropland increases upon crossing the Red River into Texas, 7 miles south of the Valliant Mill. The majority of the land surrounding the Valliant Mill is commercial timber production, most of it owned or managed by Weyerhaeuser.

As discussed before, the ambient air impacts from the proposed project are not expected to cause or contribute to an exceedance of the primary or secondary NAAQS. Therefore, no significant adverse impact on soil and vegetation is anticipated.

<u>Visibility Impairment Analysis</u>
A visibility impairment analysis examines the visual quality in the impact area of the proposed project and determines if the affected emission sources will contribute to significant visibility impairment. The proposed project will not result in a net emissions increase of NO_x, SO_2, PM, or PM_{10}. Since there is no net emissions increase in visibility impairing pollutants, the maximum potential impacts from the proposed project are not expected to impact visibility in the surrounding area.

SECTION X. Class I Area Impact Analysis

Class I Areas are defined by the U.S. EPA's New Source Review Manual as those areas of the nation that are of special natural, scenic, recreational, or historic interest to the public. The closest Class I Area to the Valliant Mill is the Caney Creek Wilderness Area, which is located approximately 97 kilometers (km) northeast of the facility. This Class I Area is managed by the U.S. Forest Service (FS).

Class I Area analyses examine two separate items: (1) Class I Increments and (2) Air Quality Related Values (AQRVs). Class I Increment modeling is explicitly required by U.S. EPA under the PSD program and is reviewed for approval by the state permitting agency. Class I Areas have a separate set of PSD Increments for PM_{10}, SO_2, and NO_x that are more stringent than the typically considered Class II Increments. The proposed project will not result in a net emissions increase of PM_{10}, SO_2, and NO_x. Therefore, a Class I Increment modeling analysis is not warranted.

In addition to the Increment analysis required for the protection of human health and welfare, additional air quality analyses can be requested to ensure that the natural and cultural resources of certain designated national parks and wilderness areas (i.e., Class I Areas) are not adversely impacted by air pollution. Federal Land Managers (FLMs) are tasked with protecting specific Class I Areas and have defined AQRVs to assess the impacts of new and existing facilities on these areas. These AQRVs include visibility, regional haze, and the deposition of nitrates and sulfates in soil and surface waters. The maximum potential air quality impacts from the proposed project are not expected to significantly impact any AQRVs in the Caney Creek Wilderness Area

SECTION XI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-4 (New Source Performance Standards) [Applicable]
Federal regulations in 40 CFR Part 60 are incorporated by reference as they exist on July 1, 2003, except for the following: Subpart A (Sections 60.4, 60.9, 60.10, and 60.16), Subpart B, Subpart C, Subpart Ca, Subpart Cb, Subpart Cc, Subpart Cd, Subpart Ce, Subpart AAA, and Appendix G. NSPS regulations are covered in the "Federal Regulations" section.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Weyerhaeuser will submit required annual emissions information (Turn Around Document) and emission fees to the Air Quality Division.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule
- 0.6 TPY of any one Category A toxic substance
- 1.2 TPY of any one Category B toxic substance
- 6.0 TPY of any one Category C toxic substance

Part 7 includes the requirements for PSD projects in attainment areas. This project is classified as a significant modification to a major facility. Since this is a physical change that requires a significant modification, a construction permit is required. The Title V permit application for this facility will be updated as required to reflect the modifications associated with this project.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day. Within ten (10)

working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Part 70/Title V sources must report any exceedance that poses an imminent and substantial danger to public health, safety, or the environment as soon as is practicable. Under no circumstances shall notification be more than 24 hours after the exceedance.

OAC 252:100-13 (Prohibition of Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-17 (Incinerators) [Not Applicable]
Part 9 of Subchapter 17 regulates commercial and industrial solid waste incineration units constructed on or before November 30, 1999. Construction of all sources as part of the project will take place after this date.

OAC 252:100-19 (Particulate Matter (PM)) [Applicable]
Subchapter 19 specifies a PM emission limitation from fuel-burning equipment and industrial processes. Subchapter 19 specifies PM emissions limitations based on heat input capacity. Weyerhaeuser considers the heat input capacity of the new equipment to be confidential. For the new CFB Boiler, Recovery Furnace, and Lime Kiln applicable permit limitations are more stringent than Subchapter 19, therefore they are in compliance with Subchapter 19.

Subchapter 19 specifies a limit of PM emissions from wood-waste burning equipment of 0.35 lb/MMBTU. The CFB Boiler is subject to this standard. Emissions from the CFB Boiler are limited to 0.025 lb/MMBTU, which is in compliance with Subchapter 19.

This subchapter limits emissions of particulate matter from processes other than fuel-burning equipment based on their process weight rate. All the new equipment's emissions rates of PM are in compliance with the allowable PM emissions under Subchapter 19.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. Emission units subject to an NSPS opacity limit are exempt from this section. The new boiler, kilns and other emission units are subject to opacity limits under NSPS and are exempt from this subchapter.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or wind-borne without taking "reasonable precautions" to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Most of the materials

handled are wood/wood waste, therefore non-brittle and not very susceptible to becoming fugitive dust. Haul roads and the landfill are watered to minimize emissions of fugitive dust. The permit will require reasonable precautions to minimize fugitive dust.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2 limits the ambient air impact of sulfur dioxide (SO_2) emissions from any existing facility or any new petroleum and natural gas process facility subject to OAC 252:100-31-26(a)(1). The ambient air quality modeling summarized in the following table demonstrates compliance with the SO_2 standards.

COMPLIANCE WITH SO_2 AMBIENT IMPACTS LIMITATIONS

Averaging Period	Ambient SO_2 Impacts Limitation, ug/m^3	Modeled SO_2 Impacts, ug/m^3
3-Hours	650	299
24-Hours	130	104

Part 2 also limits H_2S impacts to 0.2 ppm (24 hour average). Compliance with this standard is the subject of Consent Order 99-026 and will be discussed in Section XI: "Compliance Plans."
Part 3 specifies limitations on total reduced sulfur compounds emissions. The following table lists the standards of Subchapter 31 for existing Kraft paper mills

COMPLIANCE WITH TRS EMISSIONS LIMITATIONS

Emission Unit	TRS Emission Limitation of OAC 252:100-31 (12-hour average as H_2S on a dry basis)	TRS Emission Rate Test Results
Recovery Furnace	40 ppm @ 8% O_2	24.6 ppm @8% O_2 (1989)
Lime Kiln	40 ppm @ 10% O_2	31.3 ppm @10% O_2 (1989)
Smelt Dissolving Tanks	0.016 g TRS per kilogram (0.033 lb/ton) black liquor solids	0.013 g TRS per kg black liquor solids (0.02 lb/ton BLS)(1989)
NCG Thermal Oxidizer, when incinerating NCGs from the evaporators and digesters	5 ppm by volume	0.9 ppm (4/5-6/02 stack test)

Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels, the limit is 0.2 lbs/MMbtu heat input; for liquid fuels, the limit is 0.8 lb/MMBTU; and for solid fuels, the limit is 1.2 lb/MMBTU. The permitted SO_2 emission rates are much more stringent than Subchapter 31 limits.

Part 5, Section 27 addresses sulfur oxide emission limits from blow pits, washer vents, storage tanks, digester relief, and recovery furnace of any new pulp mill. The Valliant Mill began operation in 1971; therefore, this section does not apply.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
Subchapter 33 affects new fuel-burning equipment with a rated heat input of 50 MMBTUH or more. The CFB Boiler and the Recovery Furnace emission rates are in compliance with the applicable limitations of Subchapter 33. The Lime Kiln burns a combination of solid and gaseous fuels for which there is no applicable limitation.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and containing a VOC with a vapor pressure greater than 1.5 psia at maximum storage temperature to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. No new storage tanks within these thresholds are proposed for this project.
Part 5 limits the VOC content of paints and coatings. The Valliant Mill does not normally conduct coating or painting operations except for routine maintenance, which is exempt
Part 7 also requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion. The equipment at this location is subject to this requirement.

OAC 252:100-41 (Hazardous Air Pollutants and Toxic Air Contaminants) [Applicable]
Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they exist on July 1, 2003, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radionuclides. In addition, General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, J, L, M, N, O, Q, R, S, T, U, W, X, Y, AA, BB, CC, DD, EE, GG, HH, II, JJ, KK, LL, MM, OO, PP, QQ, RR, SS, TT, UU, VV, WW, XX, YY, CCC, DDD, EEE, GGG, HHH, III, JJJ, LLL, MMM, NNN, OOO, PPP, QQQ, RRR, TTT, UUU, VVV, XXX, AAAA, CCCC, GGGG, HHHH, JJJJ, NNNN, OOOO, QQQQ, RRRR, SSSS, TTTT, UUUU, VVVV, WWWW, XXXX, BBBBB, CCCCC, FFFFF, JJJJJ, KKKKK, LLLLL, MMMMM, NNNNN, PPPPP, QQQQQ, and SSSSS are hereby adopted by reference as they exist on July 1, 2003. These standards apply to both existing and new sources of HAPs. These requirements are covered in the “Federal Regulations” section.
Part 5 is a state-only requirement governing toxic air contaminants. New sources (constructed after March 9, 1987) emitting any category “A” pollutant above de minimis levels must perform a BACT analysis. All sources are required to demonstrate that emissions of any toxic air contaminant which exceeds the de minimis level do not cause or contribute to a violation of the MAAC. The applicant conducted modeling for each pollutant with emissions above a de minimis level. The ISCST3 model was used using a full year of meteorological data with the predicted impacts shown in the following table.

COMPLIANCE WITH OAC 252:100-41

Toxic	Ambient Impacts[A] ug/m^3	MAAC[B] ug/m^3	Refined Modeling Required?
1,1,2-Trichloroethane	1.69	545	No
1,2,4-Trichlorobenzene	8.62	4000	No
1,2-Dichloroethane	2.70	40	No
1,2-Dichloroethylene	10.22	79296	No
Acetaldehyde	245.85	3600	No
Ammonia	35.96	1742	No
Barium	0.02	10	No
Benzene	0.34	32	No
Cadmium	0.00	0.5	No
Carbon Tetrachloride	12.72	125	No
Chloroform	10.23	97	No
Ethanol	81.99	38000	No
Formaldehyde	18.44	12	Yes
Iron	0.05	10	No
Isopropanol	120.48	98339	No
Methanol	11,344.24	26216	No
Methyl ethyl ketone	409.38	59000	No
Methyl isobutyl ketone	257.74	20486	No
Methylene chloride	4.51	1736	No
Nickel	0.03	0.15	No
o-Xylene	6.00	43427	No
Phenol	1.67	384	No
Silver	0.08	2	No
Styrene	1.75	4260	No
Sulfuric acid mist	1.45	10	No
Terpenes	220.32	11120	No
Tetrachloroethylene	4.82	3350	No
Trichloroethylene	2.63	1343	No
Vanadium	0.01	0.5	No

A Maximum Modeled Concentration represents the sum of the highest modeled impacts over the five meteorological years for each pollutant from each modeled mill sources (independent of space and time).
B All screening standards are MAACs pursuant to the Partial Listing of Air Toxics Subject to OAC 252:100-41, except the screening standard for iron is a PEL established under 29 CFR 1910.1000.

As presented in the table above, refined air quality dispersion modeling was only required for formaldehyde. Therefore, the post-project source emissions for formaldehyde were modeled for all five meteorological years to obtain a more realistic assessment of impacts. The following table presents the results of the refined air quality dispersion modeling analysis for formaldehyde.

REFINED DISPERSION MODELING RESULTS FOR FORMALDEHYDE

Meteorological Year	Maximum Impact ($\mu g/m^3$)
1989	9.77
1990	10.19
1991	8.72
1992	10.55
1993	9.16

As shown in the table above, the maximum modeled impacts from post-project facility-wide formaldehyde emissions are less than the corresponding MAAC of 12 $\mu g/m^3$. Therefore, the post-project facility-wide emissions from the proposed project at the Valliant Mill are in compliance with the requirements of Subchapter 41.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. All required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not municipal landfill

SECTION XII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]

The facility has been issued four PSD permits. These permits were issued following demonstrations that insure that the facility will not cause or contribute to a violation of a NAAQS, PSD increment, or adversely affect visibility or other air quality related value (AQRV). Since the net emissions increase from the project will exceed the PSD significant emission rate for VOC and SAM, PSD review was applicable for these pollutants. The facility is a major source for NOx, CO, SO_2, PM_{10}, and VOC. Any future increases must be evaluated in the context of PSD significance levels: 40 TPY NOx, 100 TPY CO, 40 TPY SO_2, 15 TPY PM_{10}, 40 TPY VOC, 10 TPY TRS, or 0.6 TPY lead.

NSPS, 40 CFR Part 60 [Applicable]

NSPS require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology specified in the applicable provisions. NSPS regulations apply to any "affected" facility, "modification" of an existing affected facility, or "reconstruction" of an existing affected facility for which construction commences after the date of proposal of NSPS. The new Recovery Furnace, new Lime Kiln, new Smelt Dissolving Tanks, new CFB Boiler, and the new brownstock washing system are units associated with the project that are affected by an NSPS.

<u>Subpart D</u> (Steam Generating Units) affects boilers with a rated heat input greater than 250 MMBTUH which commenced construction, reconstruction, or modification after August 17, 1971. This subpart affects the new Bark Boiler, specifying emissions limitations of 0.8 lb/MMBTU SO_2, 0.10 lb/MMBTU PM, and 0.3 lb/MMBTU NOx. CEMS systems measuring opacity, NOx, SO_2, and a diluent gas (CO_2 or O_2) are required. The existing bark boiler will be decommissioned.

<u>Subpart Db</u> (Commercial-Industrial-Institutional Steam Generating Units) affects boilers with a rated heat input above 100 MMBTUH which commenced construction, reconstruction, or modification after June 19, 1984. This subpart affects the CFB Boiler, specifying emissions limitations of 0.80 lb/MMBTU SO_2, 0.10 lb/MMBTU PM, and 0.20 lb/MMBTU NOx. CEMS systems measuring NOx, SO_2, and a diluent gas (CO_2 or O_2) are required. Continuous monitoring of opacity is only required during periods of oil combustion in the CFB Boiler. The permit will require compliance with all applicable requirements of this subpart.

<u>Subpart Kb</u> (Volatile Organic Materials Storage Vessels) affects tanks with a capacity above 19,812 gallons which commenced construction, reconstruction, or modification after July 23, 1984. The project does not propose any new or modified storage vessels exceeding the de minimis capacities and/or vapor pressures specified in 40 CFR 60.110b(b). Therefore, this subpart is not applicable.

<u>Subpart BB</u> (Kraft Paper Mills) affects each digester system, brown stock washer system, multiple-effect evaporator, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system (i.e., steam stripping system) in kraft pulp mills, for which construction, modification, or reconstruction is commenced after September 24, 1976. The No. 2 brownstock washer and spent liquor concentrator were modified after the effective date, therefore they are subject to NSPS, Subpart BB. The Lime Kiln and the NCG Thermal Oxidizer are pollution

control devices for equipment subject to Subpart BB. Subpart BB prohibits discharge into the atmosphere of gases that contain total reduced sulfur (TRS) in excess of 5 ppm by volume unless the gases are combusted in an incinerator or other device not subject to the provisions of this subpart and are subjected to a minimum temperature of 1200 ºF for at least 0.5 seconds. Subpart BB requires a continuous monitoring system and describes excess emissions as periods in excess of 5 minutes in duration in which the combustion temperature at the point of incineration is less than 1200ºF. The applicant will maintain compliance with NSPS, Subpart BB by continuously monitoring the control device combustion temperature and using engineering calculations to determine residence time. The Lime Kiln is also subject to this subpart when combusting exhaust gases as a back up to the NCG Collection System and Thermal Oxidizer. The new Recovery Furnace, new Lime Kiln, new Smelt Dissolving Tanks, and the new brownstock washing system are subject to this subpart. The permit will require compliance with all applicable requirements for each affected emission unit.
Subpart Y (Coal Preparation Plant) affects thermal dryers, pneumatic coal cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at any coal preparation plant that commences construction or modification after October 24, 1974. The Valliant Mill is not considered a coal preparation plant, as it does not operate any of the processes identified in 40 CFR 60.251(a): breaking, crushing, screening, wet or dry cleaning, and thermal drying of coal. Therefore, this subpart is not applicable.

NESHAP, 40 CFR Part 61 [Subpart E Applicable]
Subpart E (Mercury Emissions) affects wastewater treatment sludge incineration, limiting mercury emissions to 3,200 grams per 24-hour period. This standard affects the Bark Boiler, which is used to dispose of water treatment sludges. The permit will require compliance with all applicable requirements.

NESHAP, 40 CFR Part 63 [Subparts S, MM, and DDDDD are Applicable]
There are three subparts that affect the Pulp and Paper Industry. The provisions of these subparts apply to a major source that uses the following processes and materials:

1. Kraft, soda, sulfuric, or semi-chemical pulping processes using wood; or
2. Mechanical pulping processes using wood; or
3. Any process using secondary or non-wood fibers.

Subpart S (Pulp & Paper Industry) establishes MACT standards for control of HAPs pulp and paper production which were finalized and published in the Federal Register on April 15, 1998. These standards will affect knotter systems (wood knot removal systems), pulp screens, pulp washing systems, decker systems, digester vents, evaporator system vents, turpentine recovery systems, weak liquor evaporators, and other high-volume-low-concentration (HVLC) and low-volume-high-concentration (LVHC) systems. With the exception of those systems not required to be collected and controlled until April 2006, these units are currently vented to the NCG thermal oxidizer. The Valliant Mill was granted an extension for compliance with Subpart S until April 15, 2002. Therefore, the 180-day period within which the facility must demonstrate compliance began on April 15, 2002. The pulp washing systems are allowed until April 17, 2006, to achieve compliance provided that the owner or operator establishes milestones of progress and dates by which these will be achieved.

There are several units not affected by Subpart S but which do have significant HAP emissions. In addition to the No. 3 Digester system (semi-chemical process), Subpart S does not affect the paper machines; applicability ends at the last pulp washing step. The OCC plants are “secondary fiber” processes, but the only standards of Subpart S which affect secondary fiber processes are for bleaching units; there is no bleaching unit at this facility. The new brownstock washing system is subject to this standard. The permit will require compliance with all applicable standards.

Subpart MM (Chemical Recovery Combustion Sources) establishes MACT standards for control of HAPs from chemical recovery combustion sources which were finalized and published in the Federal Register on January 12, 2001. The new Recovery Furnace, new Lime Kiln, and new Smelt Dissolving Tanks are subject to this standard. The permit will require compliance with all applicable requirements.

Subpart DDDDD (Industrial, Commercial, and Institutional Boilers and Process Heaters) was published in the Federal Register on September 13, 2004, and affects any boiler or process heater located at a major source of HAP. The existing boiler at this facility is classified as an existing large solid fuel boiler (ELSFB). The new boiler is classified as a new large solid fuel boiler (NLSFB). The LSFB’s will be required to meet the emission limitations in Table 1, Section 7 and the work practice standards of Table 2.A, Sections 3 or 4 of this subpart. ELSFBs will be required to conduct initial performance tests in accordance with Tables 5.A, 5.C, and 5.E. Initial compliance must be demonstrated no later than 180 days after the date of publication of the final rule in the federal register.

Compliance Assurance Monitoring, 40 CFR 64 [Applicable]

Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant greater than major source levels.

Emission units subject to a standard established after date (1990) are not subject to this regulation. The facility will be required to achieve compliance with Part 64 during the Title V permit process.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]

This facility does not store any regulated substance above the applicable threshold limits. More information on this federal program is available at the web site: http://www.epa.gov/ceppo/.

Stratospheric Ozone Protection, 40 CFR Part 82 [Applicable]
This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does the facility perform service on motor (fleet) vehicles which involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

SECTION XIII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a **Tier II** based on the request for a construction permit for a major source. The applicant published the "Notice of Filing a Tier II Application" in the *McCurtain Gazette* on January 30, 2004, a weekly newspaper of general circulation in McCurtain County. The notice said that the application was available for public review at the Public Library, Two SE Avenue "D", Idabel, Oklahoma or at the AQD office. The applicant published the "Notice of Draft Tier II Permit" in the *McCurtain Gazette* on January 30, 2004, a weekly newspaper of general circulation in McCurtain County, on the 24th of August, 2004. The notice stated that the draft permit was available for public review at Public Library, Two SE Avenue "D", Idabel, Oklahoma and was available for review on the Air Quality section of the DEQ web page at *http://www.deq.state.ok.us*. The U.S.D.A. Forest Service manager of the Ouachita National Forest has been notified of the application. The facility is located within 50 miles of the borders with the states of Texas and Arkansas; both states have been notified of the draft permit. No comments were received from the public, the State of Texas, the State of Arkansas, or U.S. EPA Region VI.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the property.

Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page:*http://www.deq.state.ok.us/*

Response to Comments on the Draft Permit

The following comments dated July 20, 2004, were received from USDA FS-Southern Region. The comments are typed in italics.

1. Comment: *The applicant used 2002 & 2003 emission inventories submitted to the state for their actual emissions. In these inventories, they used an older AP-42 (1/95) NOX emission factor of 0.55 lb/MMBtu for the power boiler using natural gas. The current version of AP-42 (7/98) cites a NOx emission factor of 0.28 lb/MMBtu, which is significantly lower. The use of the higher and older emission factor in a potential to emit or emission inventory calculation would be conservative, so in that context, its use is not a problem. However, if the higher emission factors are used in the actual emissions calculation, it is possible that the baseline (past-actual)*

NOx emissions may have been over estimated. Therefore, I am requesting that you verify that the higher emission factors are appropriate for this source. If there are any existing stack test data (or CEM data) for this unit, then those data should be used to establish an accurate NOx baseline for the PSD netting analysis.

Response: Stack test was done on this unit on August 5, 2004. The results of 3 one-hour runs result in an emission of 0.39 lbs NOx/MMBtu when firing a mix of natural gas and fuel oil. This test result was used to revise the netting analysis.

2. Comment: *Also please review that the baseline emission calculations for the other emission units included in the netting calculation and verify that they also use the most unit-specific data available.*

Response: Weyerhaeuser has documented emission factors that have been provided to the state and utilized for prior permitting, compliance demonstration and annual inventories.

3. Comment: *Best Available Control Technology (BACT) is applicable at all emission units at which a net emissions increase would occur in the pollutants subject to PSD review (VOC and SAM in this case). Based on your review of the netting process, BACT may be applicable at more emissions units than were actually listed.*

Response: BACT is applicable to all emission units emitting a particular pollutant and that are physically modified located at a facility for which a significant net emission increase has been determined for that particular pollutant. For this particular modification at this facility, it was determined that there was only a significant net emission increase in VOC and SAM emissions. All emission units emitting VOC and SAM that will be physically modified as a result of this modification were reviewed to determine if a BACT review was conducted for those emission units. The only emission units that were modified for which a BACT analysis was not conducted were the No. 4 Brownstock Washing System and the Spent Liquor Mix tank. Since the No. 4 Brownstock Washing System is subject to MACT Subpart S (40 CFR 63.443(c)), which requires it to be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements of 40 CFR 63.443(d), the applicant did not consider it a separate emission unit subject to a BACT analysis. The applicant also reviewed emissions from the Spent Liquor Mix Tank for applicability of BACT. However, due to the small amount of VOC emissions from the Tanks (2.52 TPY) and the fact that the U.S. EPA's RBLC database does not identify any control technologies as BACT for Spent Liquor Mix Tanks a BACT analysis was not conducted for these emission units.

4. Comment: *We would like to see how compliance will be demonstrated with the BACT limits proposed.*

Response: This is addressed in the specific conditions.

5. Comment: *SAM for CFB Boiler, it is unclear if BACT is suggested as the top control option of "Dry Scrubbing in CFB Bed" or if no control was selected. If no control was selected then a* *cost effectiveness calculation should be made for the low sulfur coal option. We assume that the emission rates listed in the RBLC (appendix C of the application) are short term limits, since compliance is usually shown with stack tests. As such we feel it is most appropriate to compare the daily average proposed BACT limit to the RBLC, not the monthly average limit. When this comparison is made the proposed SAM limit of 0.0021 lb/MMBtu is above those listed. A comparison should be made between those boilers and this one to determine why this boiler can't achieve those emission levels at a minimum.*

Response: Dry Scrubbing in CFB Bed was selected as BACT. There are daily and monthly average emission limits for BACT for SAM. The higher daily limit is to accommodate higher sulfur content for short term use.

6. Comment: *In order to control emissions of SAM for Recovery Furnace, emissions of SO_2 must be controlled. Therefore, the applicant focused on controlling emissions of SO_2. High solids firing was selected as BACT for SAM. I found this statement in the Air Pollution Engineering Manual (2000, AWMA, ed. by W.T. Davis) section on kraft pulp mills for SO_2 emissions "Factors that influence SO_2 levels are liquor sulfidity, liquor solids content, stack gas O_2, furnace load, auxiliary fuel use, and furnace design. None of these factors has exhibited a consistent relationship to SO_2 emissions (p. 789)." Obviously there are a number of factors that need to be considered regarding sulfur emissions from this unit, including upstream process units. The proposed BACT limit is in terms of concentration. Please tell us what this limit is in terms of mass flow (pound per hour). We can not find the stack gas flow rate in the application.*

Response: More in-depth evaluation of current Kraft Recovery furnace designs reveal that high solids firing is key to consistently achieve very low SO_2 emission rates. The higher the solids content in the liquor the lesser the energy penalty incurred in evaporating the liquor moisture content. More heat becomes available in the furnace, resulting in higher temperatures in the lower furnace and smelt bed. Higher temperatures lead to greater levels of sodium volatilization and a concurrent decrease in the level of H_2S released during char pyrolysis. The latter results from the equilibrium in the H_2S capture reaction shifting to the right with increasing temperatures, as given by the equation:

$$Na_2CO_3 + H_2S = Na_2S + H_2O + CO_2$$

All SO_2 originates in the furnace first as H_2S, released during char pyrolysis. The H_2S is oxidized to SO_2 in the upper oxidizing zones. Hence, a reduction in H_2S released would lead to comparably lesser SO_2 emissions. The SO_2 emissions rates proposed in this project reflect utilizing the best current recovery design including high solids black liquor firing.

Pound per hour rates are included in the specific conditions.

7. Comment: *Since it is not known if the proposed project indeed results in a less than significant net emissions increase of PM_{10}, SO_2, and NO_x, a Class I Area Analysis (including analysis of impacts to visibility, class I increment, and acid deposition) may be needed if the netting process uses the correct baseline emissions.*

Response: See response to Comment No. 1. The emissions of PM_{10}, SO_2, and NO_x will be verified by stack testing.

Fees Paid

Major source construction permit fee of $1,500.

SECTION XIV. SUMMARY

Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility which would prohibit issuance of this permit. Issuance of the modified construction permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY

Weyerhaeuser Company **Permit No. 97-057-C (M-4) (PSD)**
Valliant Mill

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on May 15, 2004. The Evaluation Memorandum dated October 12, 2004, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

I. Equipment and Applicable Requirements [OAC 252:100-8-6(a)(1)]

A. EUG FW – Facility-Wide

1. The permittee shall submit a modification to the previously submitted Title V operating permit application within 180 days of start up of each of the Recovery Furnace, CFB Boiler, and No. 2 Lime Kiln. [OAC 252-100-8-4(b)(5)]

2. For the emission units authorized under this permit for which a Federal NSPS or NESHAP is applicable, the permittee shall submit the required notifications and/or conduct the required performance testing for the particular emission unit within the timeframes identified in the applicable regulation for that emission unit. [40 CFR Part 60.7]

3. The project is subject to PSD monitoring for ozone; therefore, the permittee shall conduct ozone monitoring prior to the commencement of operation of the Recovery Furnace, CFB Boiler, or No. 2 Lime Kiln as agreed upon with the DEQ. This monitoring will also complete the requirements for post-construction ozone monitoring for Permit No. 97-057-C (PSD) (M-2). [OAC 252-100-8-35]

B. EUG A1 – No. 1 Digester System

1. NCG's from the No. 1 Digester System shall be routed to the Recovery Furnace, CFB Boiler or Thermal Oxidizer for combustion. [OAC 252-100-8-34]

2. The No. 1 Digester System shall comply with the following regulations:
   a. Federal NSPS, 40 CFR 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

C. EUG A2 – No. 2 Digester System

1. NCG's from the No. 2 Digester System shall be routed to the Recovery Furnace, CFB Boiler or Thermal Oxidizer for combustion. [OAC 252-100-8-34]

2. The No. 2 Digester System shall comply with the following regulations:
    a. Federal NSPS, 40 CFR 60, Subpart BB; and
    b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

D. EUG A4, A5, & A7 – OCC Plant

1. The OCC Plants shall comply with the following emission limits.[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	Fugitive VOC[A]	
		lb/hr [B]	TPY [C]
E-A4, C	No. 1 OCC Plant	9.28	36.89
A5	No. 2 OCC Plant		
A7	No. 3 OCC Plant		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-D.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

E. EUG A8 – OCC Lightweight Rejects Handling System

1. The OCC Lightweight Rejects Handling System shall comply with the following emission limits. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	PM_{10}	
		lb/hr [A]	TPY [B]
E-A8,A	OCC Lightweight Rejects Baghouse	0.43	1.90

[A] Weyerhaeuser fiscal month basis, and hours of operation.
[B] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-E.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

F. EUG B1 – No. 1 Brownstock Washing Area

1. The No. 1 Brownstock Washing Area Shall comply with the following emission limits. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-B1,B	Brownstock Washer 1A	30.00	122.64	8.03	32.81
E-B1,C	Brownstock Washer 1B				

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-F.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

3. The No. 1 Brownstock Washing Area shall comply with the following regulations:
   a. Federal New Source Performance Standard, 40 CFR 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

G. EUG B2 – No. 2 Brownstock Washing Area

1. The No. 2 Brownstock Washing Area shall comply with the following emission limits. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-B2,A E-B2,B	1st Stage Brownstock Washer 2nd Stage Brownstock	21.67	87.60	5.80	23.43

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-G.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

3. The No. 2 Brownstock Washing Area shall comply with the following regulations:
   a. Federal New Source Performance Standard, 40 CFR 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

H. EUG B4 – No. 4 Brownstock Washing Area

1. NCGs from the No. 4 Brownstock Washing Area shall be collected and controlled (combusted in the recovery furnace, and CFB boiler or NCG Thermal Oxidizer).

2. The No. 4 Brownstock Washing Area shall comply with the following regulations:
   a. Federal New Source Performance Standard, 40 CFR 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

I. EUG C1 – No. 1 Paper Machine (Stock Prep)
EUG C2 – No. 1 Paper Machine (Wet End)
EUG C3 – No. 1 Paper Machine (Dry End)

1. The No. 1 Paper Machine shall comply with the following emission limits. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]	
		lb/hr [B]	TPY [C]
C1 E-C2,A	Stock Preparation Fourdrinier	115.05	419.93
E-C2,B	Vacuum Pumps/ Vacuum Flume		
E-C2,D	Press Section		
E-C3,A	Dryer Section		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-I.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

J. EUG C4 – No. 2 Paper Machine (Stock Prep)
EUG C5 – No. 2 Paper Machine (Wet End)
EUG C6 – No. 2 Paper Machine (Dry End)

1. The No. 2 Paper Machine shall comply with the following emission limits.
[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]	
		lb/hr [B]	TPY [C]
C4 E-C5,A	Stock Preparation Fourdrinier	54.33	202.97
E-C5,B	Press Section		
E-C5,D	Vacuum Pumps/ Vacuum Flume		
E-C6,A	Dryer Section		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-J.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

K. EUG C7 – No. 3 Paper Machine (Stock Prep)
EUG C8 – No. 3 Paper Machine (Wet End)
EUG C9 – No. 3 Paper Machine (Dry End)

1. The No. 3 Paper Machine shall comply with the following emission limits.
[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]	
		lb/hr [B]	TPY [C]
C7 E-C8,A	Stock Preparation Fourdrinier	62.32	209.97
E-C8,B	Press Section		
E-C8,D	Vacuum Pumps/ Vacuum Flume		
E-C9,A	Dryer Section		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-K.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

L. EUG D2 – No. 1 Power Boiler

1. The No. 1 Power Boiler shall comply with the following emission limits during periods of supplemental steam production. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
Main Stack	No.1 Power Boiler	171.00	299.16	92.99	407.29	1,486.80	933.18	623.70	622.07
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**		
Main Stack	No. 1 Power Boiler	6.14	9.36	0.02	0.10	23.25	35.43		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-L.-1 shall be demonstrated monthly based on the amount of each fuel fired in the No. 1 Power Boiler during periods of supplemental steam production and emission factors (0.39 lb/MMBTU NOx and other factors from AP-42).

3. The No. 1 Power Boiler may also be used as a back-up steam production unit for periods when the Recovery Furnace and/or CFB Boiler are not in operation. During periods of back-up operation of the No. 1 Power Boiler, the sum of the annual emissions from the No. 1 Power Boiler, Recovery Furnace, and CFB Boiler shall not exceed the sum of the annual emission limits specified in Specific Conditions I.-M.- 1 (CFB) and I.-Q.-1 (Rec. Furn). This annual emission limitation shall be in addition to the emission limitations specified in Specific Condition I.-L.-1.

M. EUG D5 – CFB Boiler

1. The CFB Boiler shall comply with the following emission limits.

[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
D5	CFB Boiler	47.29	207.12	378.30	1,656.95	378.30	952.75	283.73	828.48
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**		
D5	CFB Boiler	9.46	41.42	0.19	0.83	4.05	10.21		

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The CFB Boiler shall comply with the following BACT requirements:

Pollutant	Emission Limit	Control Technology
H_2SO_4	0.0012 lb/MMBtu (Weyerhaeuser fiscal month average) 0.0021 lb/MMBtu (daily average)	CFB Boiler with Limestone Injection
VOC (as carbon)	0.005 lb/MMBtu (Weyerhaeuser fiscal month average)	Good Combustion Practices

3. Compliance with Specific Conditions I.-M.-1 and I.-M.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.46b and 63.7520. Continued compliance with the CO, SO_2, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the NO_x and PM / PM_{10} limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I.-M.-4.

4. The CFB Boiler shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 25, 31, and 33
   b. Federal NSPS, 40 CFR 60, Subpart Db;
   c. Federal NESHAP for Specific Pollutants, 40 CFR 61, Subpart E;
   d. Federal NESHAP for Source Categories (MACT), 40 CFR 63, Subpart S (not an affected source and no applicable emission limitations – control device only): and
   e. Federal NESHAP for Source Categories (MACT), 40 CFR 63, Subpart DDDDD.

N. EUG E1 – Turpentine Recovery System

1. NCG's from the Turpentine System shall be routed to the Recovery Furnace, CFB Boiler or Thermal Oxidizer for combustion.

2. The Turpentine Recovery System shall comply with the following regulations:

a. Federal NSPS, 40 CFR 60, Subpart BB; and
b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

O. EUG E2a – Spent Liquor Concentration

1. NCG's from the Spent Liquor Concentration shall be routed to the Recovery Furnace, CFB Boiler or Thermal Oxidizer for combustion.

2. The Spent Liquor Concentration is a multiple effect evaporator system and shall comply with the following regulations:
a. Federal NSPS, 40 CFR 60, Subpart BB; and
b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S

P. EUG E2b – Evaporator Sump

1. The Evaporator Sump shall comply with the following emission limits.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E2b	Evaporator Sump	18.81	74.40	15.51	61.35

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-P.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

Q. EUG E3c – Recovery Furnace

1. The Recovery Furnace shall comply with the following emission limits.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E3c	Recovery Furnace	46.34	179.54	1,351.70	1,047.35	507.85	523.67	353.37	912.69
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**
E3c	Recovery Furnace	30.90	119.70	5.79	22.44	0.01	0.06	3.86	14.96

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The Recovery Furnace shall comply with the following BACT requirements.

Pollutant	Emission Limit	Control Technology
H_2SO_4	0.5 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP / High Solids Firing
VOC (as carbon)	40 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	Staged Combustion / NDCE

3. Compliance with Specific Conditions I.-Q.-1 and I.-Q.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.285 and 63.865. Continued compliance with the PM / PM_{10}, CO, NO_x, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the TRS and SO_2 limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I -Q.-4.

4. The Recovery Furnace shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR 60, Subpart BB;
   c. Federal NESHAP for Source Categories, 40 CFR 63, Subpart MM; and
   d. Federal NESHAP for Source Categories (MACT), 40 CFR 63, Subpart S (not an affected source and no applicable emission limitations – control device only).

R. EUG E3d – Spent Liquor Mix Tanks

1. The Spent Liquor Mix Tanks shall comply with the following emission limits.
[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E3d	Spent Liquor Mix Tanks	0.65	2.52	3.58	13.85

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-R.-1 will be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

S. EUG E4b – Smelt Dissolving Tanks

1. Gases from the Smelt Dissolving Tanks shall be routed to the Recovery Furnace as combustion air.

2. The Smelt Dissolving Tanks shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR 60, Subpart BB; and
   c. Federal NESHAP for Source Categories, 40 CFR 63, Subpart MM.

T. EUG E5 – Lime Slakers

1. The Lime Slakers shall comply with the following emission limits. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM / PM_{10}		TRS		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-E5,A	Lime Slaker Vent #1	1.62	4.85	0.06	0.17	8.15	24.36
E-E5,B	Lime Slaker Vent #2	1.62	4.85	0.06	0.17	8.15	24.36

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.T.48 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

U. EUG E6 – Causticizing System

1. The Causticizing System shall comply with the following emission limits. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E6 (2 stacks)	No. 1a Causticizer No. 2 Causticizer No. 1b Causticizer No. 3 Causticizer	15.12	45.18	0.11	0.33

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation..
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-U.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

V. EUG E7b – No. 2 Lime Kiln

1. The No. 2 Lime Kiln shall comply with the following emission limits.[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7b	No. 2 Lime Kiln	3.18	13.91	24.26	106.25	74.04	72.87	79.76	203.59
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**
E7b	No. 2 Lime Kiln	4.13	18.08	1.52	6.68	0.07	0.32	1.13	1.12

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The No. 2 Lime Kiln shall comply with the following BACT requirements.

Pollutant	Emission Limit	Control Technology
H_2SO_4	0.002 lb/MMBtu (Weyerhaeuser fiscal month average) 0.0089 lb/MMBtu (daily average)	Lime Kiln (Inherent Scrubbing)
VOC (as carbon)	0.26 lb/ton CaO (Weyerhaeuser fiscal month average)	Good Combustion Practices

3. Compliance with Specific Conditions I.-V.-1 and I.-V.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.285 and 63.865. Continued compliance with the PM / PM_{10}, CO, NO_x, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the TRS and SO_2 limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I.-V.-4.

4. The No. 2 Lime Kiln shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR 60, Subpart BB; and
   c. Federal MACT, 40 CFR 63, Subpart MM.

W. EUG E8 – Tall Oil Plant

1. The Tall Oil Plant shall comply with the following emission limits.

[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
Main Stack	Tall Oil Plant	43.20	189.22	5.60	24.51

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-W.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

X. EUG F1 – Woodyard

1. The Woodyard shall comply with the following emission limits.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM		PM_{10}		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F1	Woodyard	5.44	4.70	2.70	2.28	0.33	1.44

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-X.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

Y. EUG F1b – Coal Material Handling

1. These emission units are considered insignificant because their emissions are less than 5 TPY.

Emission Point	EU Name/Model	Construction /Modification
--	**Coal Material Storage Piles**	**2005 (Planned)**
--	**Coal Material Stacking**	**2005 (Planned)**
--	**Coal Material Reclaiming**	**2005 (Planned)**

2. The permittee shall keep records to verify insignificance.

Z. EUG F3a – Wastewater Treatment System

1. The Wastewater Treatment System shall comply with the following emission limits.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F3a	Wastewater Treatment System	111.71	441.82	27.30	119.58

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-Z.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

AA. EUG F4a – NCG Collection and Thermal Oxidation System – LVHC
EUG F4b – NCG Collection and Thermal Oxidation System – HVLC

1. The NCG Thermal Oxidizer may be used as a back-up unit for the control and combustion of NCGs and SOGs for periods when the Recovery Furnace and/or CFB Boiler is not in operation. During periods of back-up operation of the NCG Thermal Oxidizer, the sum of the annual emissions from the NCG Thermal Oxidizer, Recovery Furnace, and CFB Boiler shall not exceed the sum of the annual emission limits specified in Specific Conditions I.M.29 (CFB) and I.Q.39 (Rec. Furn.).

Prior to the operation of the CFB Boiler, the NCG Thermal Oxidizer shall be used as a back-up unit for the control and combustion of NCGs and SOGs for periods when the Recovery Furnace is not in operation. During these periods of back-up operation of the NCG Thermal Oxidizer, the sum of the annual emissions from the NCG Thermal Oxidizer and Recovery Furnace shall not exceed the annual emission limits specified in Specific Conditions I.Q.39 (Rec. Furn.); the Thermal Oxidizer lb/hr emissions shall not exceed previously permitted (No. 99-134-C) emission limits specified for the Thermal Oxidizer.

Emission Point	EU Name/ Model	PM / PM_{10}	CO	SO_2	NO_x
		lb/hr [B]	lb/hr [B]	lb/hr [B]	lb/hr [B]
F4	Thermal Oxidizer	7.6	0.4	41.5	91.1

Emission Point	EU Name/ Model	VOC [A]	TRS
		lb/hr [B]	lb/hr [B]
F4	Thermal Oxidizer	0.6	0.5

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.

2. The Thermal Oxidizer shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR 60, Subpart BB; and
   c. Federal MACT, 40 CFR 63, Subpart S.

3. Compliance with Specific Condition I.-BB.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

BB. EUG F5 – Landfill Operations

1. Landfill Operations shall comply with the following emission limits.

[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM		PM_{10}	
		lb/hr [A]	TPY [B]	lb/hr [A]	TPY [B]
F5	Landfill Operations	15.84	4.11	7.58	1.95

[A] Weyerhaeuser fiscal month basis and hours of operation.

[B] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-CC.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

CC. EUG F7 & F9 – Chip Thickness Screening and Conditioning System

1. The Chip Thickness Screening and Conditioning System shall comply with the following emission limits. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		PM		PM_{10}	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F7/F9	Bar Screen Chip Conditioner Air Density Separator #1 Air Density Separator #2 Air Density Separator #3	3.90	15.41	2.05	8.09	1.23	4.85

[A] VOC emissions limitations expressed as carbon.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-DD.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month on operating rate records and emission factors.

DD. EUG F10 – Steam Stripper System

1. SOG's from the Steam Stripper System shalll be routed to the Recovery Furnace, CFB Boiler or Thermal Oxidizer for combustion.

2. The Steam Stripper System shall comply with the following regulations:
   a. Federal NSPS, 40 CFR 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR 63, Subpart S.

EE. EUG F14 – Petcoke Silo Bin Vent No. 2

1. The Petcoke Silo Bin Vent No. 2 shall comply with the following emission limits. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM		PM_{10}	
		lb/hr [A]	TPY [B]	lb/hr [A]	TPY [B]
F14	Petcoke Silo Bin Vent No. 2	0.10	0.45	0.10	0.45

[A] Weyerhaeuser fiscal month basis and hours of operation.
[B] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-FF.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

GG. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6 (a)(3)(B)]

a. The OCC Plants (EUG A4, A5, & A7) operating rate as a monthly basis.
b. The OCC Lightweight Rejects Handling System (E-A8,A) operating rate as a monthly basis.
c. The No. 1 Brownstock Washing Area (E-B1,B & E-B1,C) operating rate as a monthly basis.
d. The No. 2 Brownstock Washing Area (E-B2,A & E-B2,B) operating rate as a monthly basis.
e. The No. 2 Paper Machine (C1, E –C2,A, E –C2,B, E –C2,D, & E –C3,A) operating rate as a monthly basis.
f. The No. 2 Paper Machine (C4, E –C5,A, E –C5,B, E –C5,D, & E –C6,A) operating rate as a monthly basis.
g. The No. 3 Paper Machine (C7, E –C8,A, E –C8,B, E –C8,D, & E –C9,A) operating rate as a monthly basis.
h. The No. 1 Power Boiler (E-D2) operating rate as a monthly basis.
i. The CFB Boiler (E-D5) operating rate as a monthly basis.
j. The Evaporator Sump (E-E2b) operating rate as a monthly basis.
k. The Spent Liquor Mix Tanks (E-E3d) operating rate as a monthly basis.
l. The Lime Slakers (E-E5,A & E-E5,B) operating rate as a monthly basis.
m. The Causticizing System (E-E6) operating rate as a monthly basis.
n. The No. 2 Lime Kiln (E-E7b) operating rate as a monthly basis.
o. The Tall Oil (E-E8) operating rate as a monthly basis.
p. The Woodyard (E-F1) operating rate as a monthly basis.
q. Insignificance activity (E-F1b) from coal material handling .
r. The Evaporator Sump (E-F3a) operating rate as a monthly basis.
s. The Evaporator Sump (E-F3a) operating rate as a monthly basis.
t. The Wastewater Treatment System (E-F3a) operating rate as a monthly basis.
u. The NCG Thermal Oxidizer (E-F4) operating rate as a monthly basis.
v. Landfill Operations (E-F5) operating rate as a monthly basis.
w. The Chip Thickness Screening (E-F7 & E-F9) operating rate as a monthly basis.
x. The Petcoke Silo Bin Vent No. 2 (E-F14) operating rate as a monthly basis.

HH. Within 180 days from issuance of this permit, the permittee shall conduct testing of actual emissions of NOx (lb/MMBTU) for the power boiler (EUG- D2) as follows and furnish a written report to Air Quality. Testing shall be conducted under conditions which are representative of normal operations over the previous two years. The following USEPA methods shall be used for testing of emissions, unless otherwise approved by Air Quality: [OAC 252:100-8-6(a)]

A. The following EPA testing methods shall be used:

Method 7E: Determination of Nitrogen Oxide Emissions from Stationary Sources.
Method 19: Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates

B. At least 30 days written notice shall be given prior to the testing to allow an observe to be present, and a pre-test plan shall be submitted at the time of notification of the day of testing. [OAC 252:100-43]

C. Testing shall be conducted while the Power Boiler is operating under the following conditions:

1. Heat input shall be 660 MMBTUH ± 60 MMBTUH.
2. Heat input from gas fuel shall be 250 MMBTUH ± 33 MMBTUH.
3. Heat input from No. 6 residual oil shall be 330 MMBTUH ± 33 MMBTUH.

D. Testing shall include a demonstration that oxygen and NOx concentrations across the diameter of the stack/duct are within 10% of the mean concentrations. The mean shall be determined by sampling at least at 8 points across the diameter.

Weyerhaeuser Company
Attn: Kelly Folsom
2821 West &th Street
Ft Worth , Texas 76107

SUBJECT: Permit Number: **97-057-C (M-4) PSD**
Facility: Valliant Paper Mill
Location: Secs. 26, 27, 28, 33 and 34-T6S-R21E, McCurtain County

Dear Mr. Folsom:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by March 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. Please refer to the permit number above and direct any questions concerning the status of this application to Roya Sharifsoltani at (405) 702-4215.

Sincerely,

Dawson Lasseter, P.E.
Chief Engineer
AIR QUALITY DIVISION

PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON STREET, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Issuance Date ________________________ **Permit No. 97-057-C(M-4)**

Weyerhaeuser Company,

having complied with the requirements of the law, is hereby granted permission to construct a Kraft Process paper mill at Valliant, McCurtain County, Oklahoma.

subject to the following conditions, attached:

[X] Standard Conditions dated October 15, 2003

[X] Specific Conditions

____Director, Air Quality Division

TITLE V (PART 70) PERMIT TO OPERATE / CONSTRUCT
STANDARD CONDITIONS
(October 15, 2003)

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with Title V of the federal Clean Air Act (42 U.S.C. 7401, et seq.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, for revocation of the approval to operate under the terms of this permit, or for denial of an application to renew this permit. All applicable requirements (excluding state-only requirements) are enforceable by the DEQ, by EPA, and by citizens under section 304 of the Clean Air Act. This permit is valid for operations only at the specific location listed.

[OAC 252:100-8-1.3 and 8-6 (a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. [OAC 252:100-8-6 (a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from emergency conditions and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV. [OAC 252:100-8-6 (a)(3)(C)(iii)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements.

[OAC 252:100-8-6 (a)(3)(C)(iv)]

C. Oral notifications (fax is also acceptable) shall be made to the AQD central office as soon as the owner or operator of the facility has knowledge of such emissions but no later than 4:30 p.m. the next working day the permittee becomes aware of the exceedance. Within ten (10) working days after the immediate notice is given, the owner operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Every written report submitted under this section shall be certified by a responsible official.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.
[OAC 252:100-8-6 (a)(3)(B)(ii), 8-6 (c)(1), and 8-6 (c)(2)(B)]

B. Records of required monitoring shall include:
(1) the date, place and time of sampling or measurement;
(2) the date or dates analyses were performed;
(3) the company or entity which performed the analyses;
(4) the analytical techniques or methods used;
(5) the results of such analyses; and
(6) the operating conditions as existing at the time of sampling or measurement.
[OAC 252:100-8-6 (a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. [OAC 252:100-8-6 (a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II of these standard conditions.
[OAC 252:100-8-6 (a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act.

F. Submission of quarterly or semi-annual reports required by any applicable requirement that are duplicative of the reporting required in the previous paragraph will satisfy the reporting requirements of the previous paragraph if noted on the submitted report.

G. Every report submitted under this section shall be certified by a responsible official.
[OAC 252:100-8-6 (a)(3)(C)(iv)]

H. Any owner or operator subject to the provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]

I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by the subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least two years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (d)]

J. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted. [OAC 252:100-8-6 (c)(4)]

K. All testing must be conducted by methods approved by the Division Director under the direction of qualified personnel. All tests shall be made and the results calculated in accordance with standard test procedures. The permittee may request the use of alternative test methods or analysis procedures. The AQD shall approve or disapprove the request within 60 days. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality. [OAC 252:100-8-6 (a)(3)(A)(iv) and OAC 252:100-43]

L. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 CFR Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-4-5 and OAC 252:100-41-15]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.
[OAC 252:100-8-6 (c)(5)(A), (C)(v), and (D)]

B. The certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period; and a statement that the facility will continue to comply with all applicable requirements.
[OAC 252:100-8-6 (c)(5)(C)(i)-(iv)]

C. Any document required to be submitted in accordance with this permit shall be certified as being true, accurate, and complete by a responsible official. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete.
[OAC 252:100-8-5 (f) and OAC 252:100-8-6 (c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based. Except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.
[OAC 252:100-8-5 (e)(8)(B) and OAC 252:100-8-6 (c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6 (c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6 (d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are listed in the Evaluation Memorandum and are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6 (d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, -5-2.2, and OAC 252:100-8-6 (a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6 (a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1 (d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6 (a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6 (c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.
[OAC 252:100-8-6 (a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.
[OAC 252:100-8-6 (a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within 10 days after such date.
[Oklahoma Clean Air Act, 27A O.S. § 2-5-112 (G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation, reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6 (a)(7)(C) and OAC 252:100-8-7.2 (b)]

B. The DEQ will reopen and revise or revoke this permit as necessary to remedy deficiencies in the following circumstances: [OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

(1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
(2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
(3) The DEQ determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.

C. If "grandfathered" status is claimed and granted for any equipment covered by this permit, it shall only apply under the following circumstances: [OAC 252:100-5-1.1]

(1) It only applies to that specific item by serial number or some other permanent identification.
(2) Grandfathered status is lost if the item is significantly modified or if it is relocated outside the boundaries of the facility.

D. To make changes other than (1) those described in Section XVIII (Operational Flexibility), (2) administrative permit amendments, and (3) those not defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII), the permittee shall notify AQD. Such changes may require a permit modification. [OAC 252:100-8-7.2 (b)]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6 (c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(18) for confidential information submitted to or obtained by the DEQ under this section):

(1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
(3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
(4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6 (c)(2)]

SECTION XIV. EMERGENCIES

A. Any emergency and/or exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [The degree of promptness in reporting shall be proportional to the degree of danger.]

[OAC 252:100-8-6 (a)(3)(C)(iii)(II)]

B. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. [OAC 252:100-8-2]

C. An emergency shall constitute an affirmative defense to an action brought for noncompliance with such technology-based emission limitation if the conditions of paragraph D below are met.

[OAC 252:100-8-6 (e)(1)]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that:

(1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
(2) the permitted facility was at the time being properly operated;
(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
(4) the permittee submitted notice of the emergency to AQD within 24 hours of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken; and
(5) the permittee submitted a follow up written report within 10 working days of first becoming aware of the exceedance.

[OAC 252:100-8-6 (e)(2), (a)(3)(C)(iii)(I) and (IV)]

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6 (e)(3)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6 (a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list. [OAC 252:100-8-2]

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.
(3) 0.6 tons per year for any one category A substance, 1.2 tons per year for any one category B substance or 6 tons per year for any one category C substance as defined in 252:100-41-40.

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or federal applicable requirement applies is not trivial even if included on the trivial activities list. [OAC 252:100-8-2]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6 (a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

(1) result in no net emissions increases,
(2) are not modifications under any provision of Title I of the federal Clean Air Act, and
(3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days, or 24 hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this subsection. [OAC 252:100-8-6 (f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

(1) No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility. [OAC 252:100-3]

(2) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]

(3) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(4) For all emissions units not subject to an opacity limit promulgated under 40 CFR, Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. [OAC 252:100-25]

(5) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(6) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(7) Volatile Organic Compound (VOC) storage tanks built after December 24, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(8) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

(9) Except as otherwise provided, no person shall cause or permit the emissions of any toxic air contaminant in such concentration as to cause or to contribute to a violation of the MAAC. **(State only)** [OAC 252:100-41]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A.The permittee shall comply with the following standards for production and consumption of ozone-depleting s

1. Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4.
2. Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13.
3. Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B. [40 CFR 82, Subpart F]

(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156.
(2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158.
(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.
(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166.
(5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158.
(6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Sources' Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in Oklahoma Administrative Code 252:100-8-7.2(a) only if the following procedures are followed:

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 Code of Federal Regulations (CFR) § 70.7 (h)(1). This public notice shall include notice to the public that this permit is subject to Environmental Protection Agency (EPA) review, EPA objection, and petition to EPA, as provided by 40 CFR § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 CFR § 70.8(b).
(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 CFR § 70.8(a) and (c).
(5) The DEQ complies with 40 CFR § 70.8 (c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
(6) The DEQ complies with 40 CFR § 70.8 (d).
(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8 (a).
(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3 (a), (b), and (c), and by EPA as provided in 40 CFR § 70.7 (f) and (g).
(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.